FEBRUARY 1953

Homecraft

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and THE HOME OWNER

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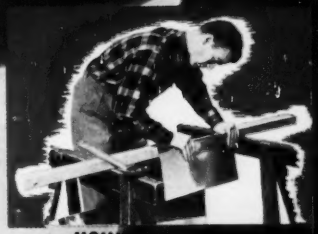
HOW TO SET UP A HOME WORKSHOP

PICTURE STORY ON MAKING A COFFEE TABLE

HOW TO WATERPROOF YOUR BASEMENT



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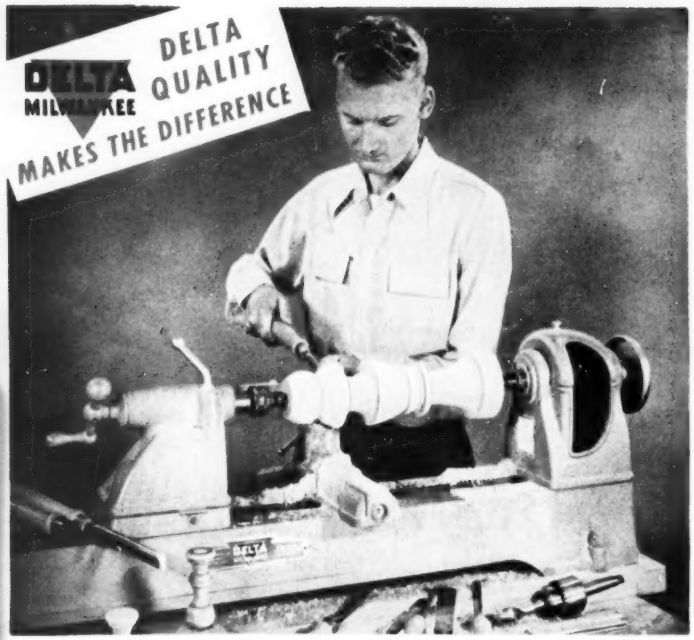

Know the Fun of Working with a Fine LATHE Know the Satisfaction of owning a DELTA

Check these outstanding quality features:

- heavily ribbed bed for strength and rigidity
- Timken tapered roller bearings carry the spindle
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- No. 2 Morse Taper centers and other attachments for quick changes; heavy non-jamming thread on both ends of spindle permits use of either inboard or outboard face plates, grinding, polishing, or sanding accessories
- 5/8" hole through headstock for repetitive work on rods and dowels.
- graduated tail stock sleeve machined inside with a No. 2 Morse Taper and adjustable pointer for convenience in drilling work held in chuck
- handy lever locks tailstock to bed—ball lever at rear locks or unlocks tailstock sleeve in one easy movement
- set-over tailstock—easy to align—centers accurately
- slide rest and other attachments for light metal turning available at small cost
- 4 speeds—930, 1400, 2140, 3200 rpm

Make tables, chairs, lamps and scores of attractive items—do fine professional-looking work with a Delta Homecraft 11" Lathe.

A fine lathe means you can do work better, faster and easier. Yet a high quality machine doesn't mean high price—not when it is DELTA. Be sure to see this tool at your Delta Dealer's. Note its many quality features and its wonderful-value price.

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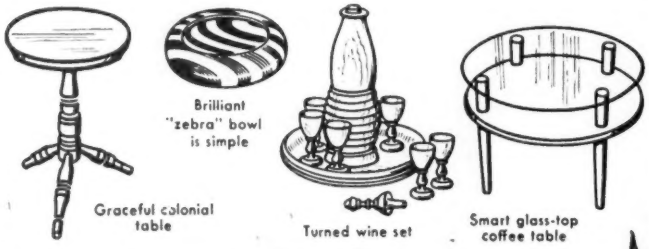

DELTA POWER TOOL DIVISION
ROCKWELL MANUFACTURING COMPANY
508A N. LEXINGTON AVENUE • PITTSBURGH 8, PA.

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Pittsburgh 8, Pa.

Please send the following:

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- ☐ "Getting the Most Out of Your Lathe"—25c enclosed.

Name_____

Address_____

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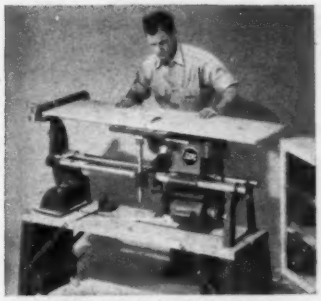
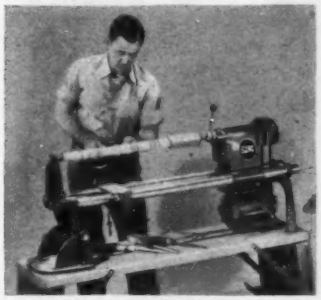
Will the power tool you buy have these quality features?

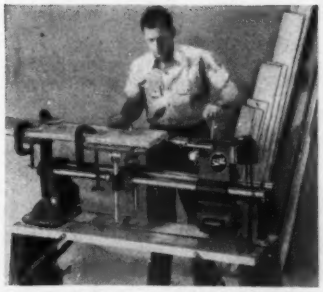


EXTRA CAPACITY AS CIRCULAR SAW. Effective table size of 54" x 17" allows you to cut to center of an 8' panel. Up to 48" between fence and blade; exclusive adjustment for precise setting. 2¼" depth of cut.

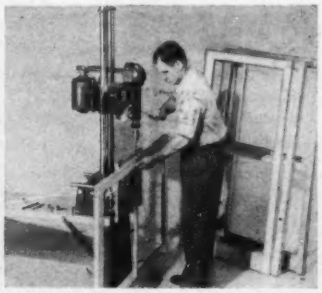
If you're thinking of a SHOPSMITH it has, because there's no costly duplication of parts. Therefore, SHOPSMITH can *afford* to give you top quality, through and through. You have *one* four-ball-bearing arbor assembly ...*one* strong, substantial table...*one* precision headstock ...*one* heavy-duty motor. Multi-purpose SHOPSMITH is the largest selling power tool in America because it packs the most quality in the smallest space at the lowest cost. Fill out and mail the coupon for the 16-page illustrated booklet – it's free!



UNUSUAL CONVENIENCE AS LATHE. Tool rest slides parallel to workpiece; can be instantly adjusted and locked in position *without stopping motor.* Headstock slides to end of ways. Turn bowls, flat pieces while facing work.



LARGE CAPACITY AS HORIZONTAL DRILL PRESS. Drills, bores, reams, countersinks. No limit on length of work! Rigid fence support and adjustable table height make dowel drilling easy, accurate. Precise 90° drilling, too!



REAL PRECISION AS VERTICAL DRILL PRESS. Stress-proof ⅝" steel spindle, induction-hardened tip. *Four* ball bearings, centerless-ground quill. Drills to center of 15" circle! 27" between table and chuck; 4" quill feed.

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Complete 5-tool unit **ONLY** $189.50
Motor* and bench extra

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the saw most carpenters use

Homecraft & THE HOME OWNER

A Magazine Within a Magazine

Volume 23 No. 3
Whole No. 143

Contents for JANUARY-FEBRUARY, 1953

It's New on the Market 132
Lamps of Leisure ..... Kenneth Jackson 136
Bronco Desk Set ..... Roberta Fairall 137
Don't Throw That Old Chair Away ..... G. van Deurs 138
How to Set Up a Home Workshop (Part 6) ..... Dick Hutchinson 140
"Right Angles on Nature" Trays ..... Edna McFarland 143
Small Coffee Table 146
The Art of Filing Hand Saws ..... L. J. Smith 148
Woodworkers' Information Dept. ..... Frank Hegemeyer 149
Duncan Phyfe Drop Leaf End Table ..... Edward J. Hobert 151
Plywood Flat Top Desk ..... Dick Hutchinson 152
Speedy Ice Bike 155
Annual Review of How-To Books 156
Walt's Workshop: Pine Paneled Porch Enclosure ..... Walt Durbahn 161
Simplify Home Repair with New Copper Sheeting ..... Raymond Schuessler 165
Fix It Yourself ..... Perry Graffam 166
Practical Procedures for Correcting Basement Dampness ..... Frank Culhane 168
Questions and Answers ..... Perry Graffam 171
Helpful Literature for the Home Owner 172
Library of Info. for the Home Owner ..... Ernest Suerken 174
Portable Ice-Fishing Hut for Two 176
Home Owners' Shopping Column 178
Portable Emergency Wardrobe ..... Hi Sibley 180
Bicycle Storage Lean-To ..... Hi Sibley 181
Book Reviews 182
Dressing Table with Fluorescent Lighted Mirror ..... Benjamin Nielsen 184
Quickies 186
Canadian Cutter for Junior ..... Hi Sibley 188
Tie Rack ..... Orville Grisier 189

Our 23rd Year

Homecraft & The Home Owner is a national publication for the professional, school and home workshop as well as a guide to home repair, maintenance and improvement, published every other month by General Publishing Co., Inc., 154 East Erie St., Chicago 11, Ill., U.S.A. Russell C. Johns, Publisher. Entered as second-class matter July 13, 1945, at the postoffice at Chicago, Ill., under the act of March 3, 1879. Additional entry at Mount Morris, Ill. Printed in U.S.A. Copyright 1952 by General Publishing Co., Inc. All rights reserved. Subscription rates: U.S.A. —35c per copy; $2.00 a year; 2 years, $3.50; 3 years, $4.50; Canada—$2.25 a year; Foreign—50c a year extra. Requests for changes of address should include both the old and new address. The editors are always glad to receive authoritative homecraft articles from readers. Send manuscripts, photos, and drawings to Russell C. Johns, Homecraft & The Home Owner, 154 East Erie St., Chicago 11, Ill. All articles will be acknowledged and paid upon acceptance, but the return of unsolicited matter cannot be guaranteed. All manuscripts and correspondence should be addressed to the executive offices at Chicago, Illinois, and should include return postage.

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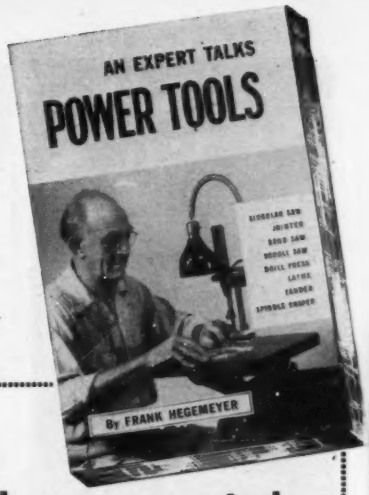
JUST OFF THE PRESS—AND ONLY A DOLLAR!

This new book tells how to get the most out of your power tools, how to improve your methods, do better work. Describes and illustrates the best way to use each machine and its attachments. Explains the different operations you can perform on each—the conventional as well as the unusual. Tells you the dos and don'ts, and how to be a safe workshopper. Special jigs and production devices developed by the author will speed up and improve your woodworking. These power tools are covered in complete detail: CIRCULAR SAW—JOINTER—DRILL PRESS—BAND SAW—SCROLL SAW—LATHE—SANDER—SPINDLE SHAPER.



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COMPLETE

"An Expert Talks Power Tools" is as good as a course of instruction in the correct and efficient use of power tools. In words and pictures it takes you step-by-step through every basic operation—and then does the same with unusual techniques Mr. Hegemeyer developed during his 45 years as a craftsman. Reading this book, you will realize you are following the footsteps of a master. We recommend particularly the descriptions of the author's specially designed jigs and production devices which in themselves are worth 'a fortune' to the workshopper who uses his tools a lot.

PRACTICAL

Don't look for any fancy talk or sleight-of-hand twists in "An Expert Talks Power Tools." What you will find instead is a veritable fountain of *usable* information to give new meaning to your tool investment and lift your own skill to a new high level. No matter how well you know these tools, Frank Hegemeyer will give you interesting new angles on the Circular Saw, Jointer, Drill Press, Band Saw, Scroll Saw, Lathe, Sander, Spindle Shaper. You will find clear explanations, beautifully sharp close-up photos of important operations and techniques, detail drawings that supplement the text and photos. As you read "An Expert Talks Power Tools" you will appreciate that a real craftsman is teaching you, whether you are a beginner or an old hand at it.

CLEAR

One of Mr. Hegemeyer's greatest assets as a writer is his ability to get across to others in simple language the intricacies of machine operations in woodworking—a subject which very easily could become unwieldy in the hands of one less skilled. As much an expert with the camera and on the drawing board as he is with power tools, the author makes his easy-to-understand text still simpler with specially posed close-up photographs and numerous mechanical drawings. Supplementary pages of *Questions & Answers* review the most common problems of those who work with power tools. Chances are, questions you yourself may have wanted to ask are covered here.

TELL-ALL PHOTOS ON EVERY PAGE
DETAIL DRAWINGS
QUESTIONS AND ANSWERS
JIGS AND PRODUCTION DEVICES

ABOUT THE AUTHOR:

Frank Hegemeyer began working with tools and wood 45 years ago. Some of his furniture and other projects are manufactured commercially. A few have won him prizes and awards. His jigs and production devices have helped thousands of woodworkers, many of whom use their shops for profit. For 20 years Mr. Hegemeyer has been writing articles on woodworking. His regular column Woodworkers' Information Department is one of the best-read features of Homecraft magazine. He is consulted frequently by professionals and amateurs in all parts of the world.

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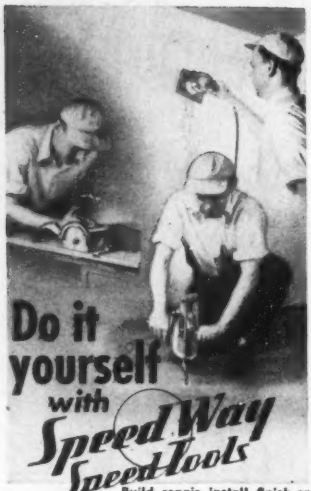

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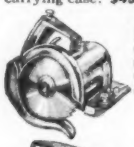
No. 150 SpeedSander
An all-ball-bearing, orbital-motion, finishing sander with powerful 3450 r.p.m., A.C. induction motor and cast aluminum body. **$34.50**

No. 150-K SpeedSander Kit
The Sander with Accessories including: deep contour pad, finishing plate, felts for free abrasives and wet rubbing, lamb's wool bonnet, 90 sheet abrasive covers, etc. in fitted steel carrying case. **$49.50**



No. 1000 SpeedSaw
¼ H.P. Universal Motor, cast aluminum housing, safety shut-off switch. Cuts all angles to 45°, any depth to 1⅛". **$29.95**

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(for metal or wood)
Extra power, high speed, electric drill with cast aluminum cases, and geared chucks.
No. 200-J ¼" SpeedDrill **$19.50**

No. 400 ½" SpeedDrill **$39.50**
also other sizes, types.

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Several fast selling kits. Painters and Householders Kit (illustrated) is typical. It has: ¼" Hornet Drill, Abrasive Discs and rubber backer plate, grinding wheel, wire brush, buff, etc. in attractive display carton... **$19.95**

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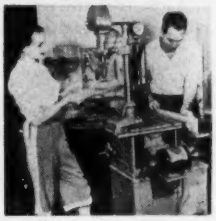
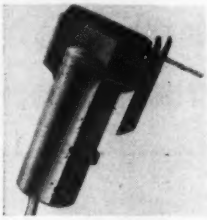
It's New on the Market for the Workshop

New Delta Combination Tool



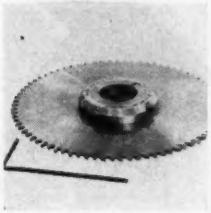
Delta Power Tool Div. of Rockwell Manufacturing Co. offers this new combination tool for the home owner "who wants to do it himself." Deltashop is built around a tilting arbor circular saw and also includes drill press, jointer and sander components. Requires no more space than the average washing machine or dishwasher. Price $209.95, including steel stand. Motor and incidental equipment extra. Delta Power Tool Div., 400 N. Lexington Ave., Pittsburgh 8, Pa.



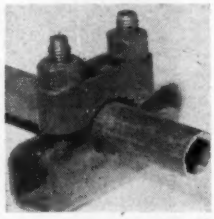
Electric Scinta Hand Saw

A real boon to home owners and workshoppers. The small heavy duty power tool is suitable for virtually all work which cannot be brought to the band, jig or circular saw. A great aid for on-the-job internal sawing, for notching, curved, straight and irregular cuts. Cuts up to 1¾" in thickness, wood, plywood, pressed board. Price $132.50 with three blades. Woodworkers' Tool Works, 222 S. Jefferson St., Chicago 6, Ill.

Self-Contained Dado Assembly



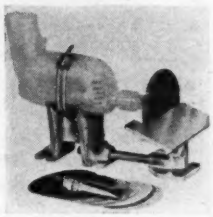
Magna Dado's 8" blade features a geared hub and has no loose parts; is the only blade specially designed for oscillating dado cutting. Is extra heavy (⅛" thick) and has a unique tooth profile. Large diameter of the blade permits cuts up to 2". Fits saws with ⅝" or ¾" arbors. Calibrations provide setting guides, but infinite range between 5/32" and ⅞" possible by using setting between calibrations. Price $12.95, Magna Eng'g Corp., Menlo Park, Calif.



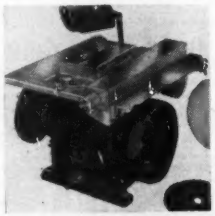
Compact Pipe Vise

This new pipe vise is especially suited to operations performed in the home or farm workshop. Despite its small size it holds pipe up to 1". Fulfills all general utility requirements. Completely sturdy. Easy to attach in just a few minutes' time. Painted red. Price $2.50. B. C. Moses, 3019 Prospect Ave., P.O. Box 8052, Houston 4, Tex.

Drill Stand Attachment



Workshoppers can convert ¼" electric drills into a veritable home workshop for sanding, grinding, buffing, wire brushing, horizontal drilling, etc., with the new Arco drill stand, manufactured by Arrow Metal Products Co., 140 W. Broadway, New York 13, N. Y. Clamp or screw in place on any flat surface. Electric drill held vibration-free by a quick-acting worm drive clamp. Available in 2 models. No. 400, at $7.95, has sanding table which tilts to 45° and other items; and model 401 which sells for $2.75.



Combination Power Tool

This apartment size power tool saws, grinds, sands, polishes, wire brushes. Measuring only 16" x 15", the Stanley Handyman Shop will fit in a closet, on a table or desk. Can be used as a power source for other shop equipment. Complete with ⅓ h.p. built-in motor and safety devices, price $74.50. Also offers useful accessory selection. Stanley Electric Tools, New Britain, Conn.

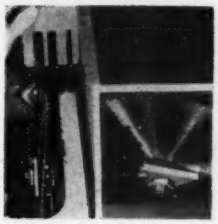
It's New on the Market for the Workshop

Jig Saw Blade Information

"Trojan Blade Tips" is the title of a helpful 14-page booklet being issued by Parker Manufacturing Co., Worcester 1, Mass. Workshoppers will find its practical tips both money and time saving. Describes jig saw blade types; how to choose right kind; wood and metal sawing techniques; discusses plastics, patterns, tension, guides, jig sawing, piercing, ripping, bevel cutting, etc. Also includes table of Trojan blades and specifications for materials and operations. Price of booklet is 15 cents.

Nylon Paint Brush

With the new "Dumore" nylon paint brush, made by A. G. Jacobus' Sons, Inc., Verona, N.J., it is possible to cover large areas in little time. This brush, 7" wide, covers twice the area of a normal wall brush, weighs only 6½ oz. Features 100% flagged nylon bristles vulcanized in rubber. Price $3.50.

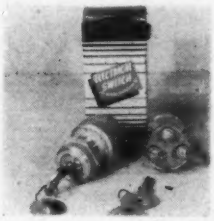


Dado Attachment

Da-Dall consists of only three parts which are mounted on the saw shaft along with any saw blade. No special choppers, blades or washers used. Once mounted, the Da-Dall can be left on the saw at all times. It is the only adjustable dado with a single screw adjustment. Cannot bend saw blades. $4.95 for sizes up to 10", $9.95 for sizes over 10". Arbor size must be specified. Da-Dall Co., 725 Second St., San Francisco 7, Calif.

Dual Purpose Stand

A new type of power tool stand designed by Shopmaster. Because of its utilitarian design, one machine does not conflict with the other. Equally adaptable for use with a band saw and a sander, or a band saw and a jig saw, or any other combination. Price $22.50. Shopmaster, 1214 Third St., So., Minneapolis, Minn.



Power Tool Lock Switches

Heavy duty, with extra heavy silver contacts. Double-throw, three-terminal feature permits installation of a 110-v. lamp to illuminate the work and the machine. Up to ½ hp, switch simply replaces the regular switch and is used to start and stop. On ¾ and 1-hp motors, can be used as line lock-up switch before the regular switch which is used to start and stop motor. Price $1.98 each. Irving C. Miller, 3012 Wallace Ave., N. Y. 67, N. Y.

Super Dowel Centers

These centers take all sizes of dowels from ⅛" to the largest made. Points are concentric. All holes can be drilled at the same time. They're practical, economical and eliminate the need for numerous sizes of dowel centers. One set will serve for all size dowels. 4 centers, $1.00. A. D. McBurney, 317 E. 4th St., Los Angeles 13, Calif.

Last Year's Profit $3,000!

with a FOLEY automatic SAW FILER

"Last year's profit amounted to $3,000. Not so bad for a one-man outfit"—from Chas. C. Hough. James B. Williams wrote us—"I made $765 last year filing saws, and it sure comes in handy. I do this work in my spare time." Men in communities of all sizes make up to $3 or $4 an hour with the Foley Saw Filer working full time or part time. That extra money comes in mighty handy in these days of high prices.

It's no trick to take care of the saw filing for your neighborhood hardware or lumber dealer—plus looking after the saws for farmers, townspeople, manual training departments and factories. The Foley files all hand saws, also band and cross-cut circular saws. It's a cash business, no canvassing, no eyestrain and no experience needed.

FREE BOOK SHOWS HOW TO START

"Money Making Facts" shows just how you can start at home in your spare time working in your basement or garage. It's an immediate cash business that can develop into a full-time repair shop. Send coupon today—no salesman will call.

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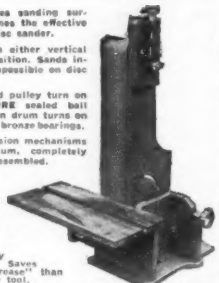

- 84 square inches sanding surface. Over 4 times the effective area of a 10" disc sander.
- Belt operates in either vertical or horizontal position. Sands inside contours impossible on disc type sanders.
- Driver drum and pulley turn on NEW DEPARTURE sealed ball bearings. Tension drum turns on Chrysler GILYTE bronze bearings.
- Spindle and tension mechanisms of cast aluminum, completely machined and assembled.
- Uses standard 4x52½" belts. Change from coarse to fine in 30 seconds.
- 1800 feet per minute. Over a MILE of straight sanding action every three minutes. Saves more "elbow grease" than any other power tool.
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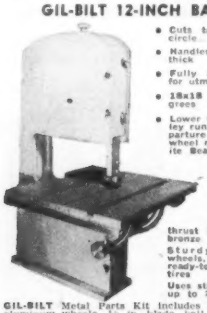
GIL-BILT 12-INCH BAND SAW



- Cuts to center of 24 in. circle
- Handles stock up to 6 in. thick
- Fully enclosed mechanism for utmost safety
- 18x18 in. table tilts 45 degrees
- Lower wheel and drive pulley runs on sealed New Departure Ball Bearings; Upper wheel runs on two ⅝" Oilite Bearings
- Upper wheel tension and tilt mechanism of cast aluminum; completely assembled
- Two blade guides, each has ball thrust bearing. Self - Lub bronze jaws

Sturdy cast aluminum wheels, precision machined ready-to-use. Heavy rubber tires

Uses standard 78 in. blades up to ⅜" wide

GIL-BILT Metal Parts Kit includes Plans, rubber tires, aluminum wheels, ¼ in. blade, ball bearing spindle, tilt mechanism, blade guides, table tilt segments, and all other metal parts $21.95

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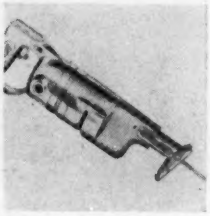
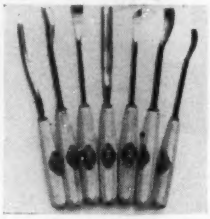
It's New on the Market for the Workshop

Heavy-Duty Portable Power Saw



The Milwaukee Sawzall is a reciprocating type sawing tool for heavy duty service. Has ¾" stroke, operates at 2250 strokes per minute. Cuts wood, transite, galvanized sheet and other metals, wire nails, Formica, Masonite, etc. Measures only 14½" long, weighs 6¾ pounds. Powered by 110-volt universal type motor. Price with assorted saw blades and steel carrying case, $78.50. Milwaukee Electric Tool Corp., 5368 W. State St., Milwaukee 8, Wis.

Wood Carving Tools

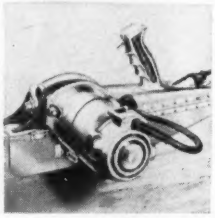


The manufacturers claim this new heavy set of wood carving tools which number 72 in all is the ultimate in design and materials quality. Used extensively by aircraft companies, schools, colleges, pattern makers, and experienced workshoppers. Full information on request from P. H. Drilsaw Co., 1561 Virginia Ave., Glendale 2, Calif.

Attachment Cuts All Types Thin Metals

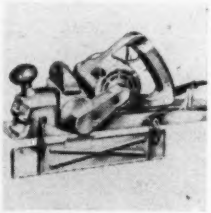
This "Nibbler" attachment for Mall electric drills facilitates artistic metal cutting, scalloping, similar intricate jobs. Designed for all thin metals such as sheet steel, brass, copper or fibre, up to 19 gage (.04). Width of cut is ⅛". Operates with any ¼" capacity standard or heavy-duty electric drill at speeds of from 800 to 3500 rpm. Designed for industrial metal shop requirements as well as for home workshoppers. Mall Tool Co., 7401 S. Chicago Ave., Chicago 19, Ill.

New Router Line



The new Speedmatic portable electric tools feature one interchangeable motor with two routers, a plane, and a lock mortiser. Features cam-lock chuck which eliminates chatter and kick. New air exhaust system passes large volume of air through the machine to cool it when used under heavy loads or in continuous production. Sharpening attachment is provided. Porter-Cable Machine Co., Syracuse 8, N.Y.

Homebuilders' 3" Plane



This portable electric plane, Model 676, is efficient for both flat surface and edge planing. Has full 3" width of cut and a ⅛" depth of cut capacity. Features depth control lever, chip deflector, high speed of 13,500 rpm. Power transmitted through non-slip sprocket-type belt which eliminates stalling. Weighs 10½ lbs., has ball bearing construction, steel carrying case, pair steel alloy blades, blade honing bracket, a blade adjusting gauge. Skil, Inc., 5033 Elston Ave., Chicago 30, Ill.

Speed Circular Saw Sharpener

Hobbyists, carpenters, and every handyman who uses a circular saw will be glad to hear that the Speed Corporation of Portland, Ore., manufacturers of the Speed Saw Filer, are now introducing the Speed Circular Saw Sharpener. Cross cut, hollow ground, combination, and rip saw blades can be sharpened without previous experience. Calibrations on the shoulder of the guide arm and file holder make this saw sharpener fool proof. $6.95 with 3-cornered file, four mandrels and working instructions. Speed Corporation, 512 N. E. 73rd Ave., Portland, Ore.

WHAT TO MAKE ON YOUR WOOD-TURNING LATHE

OVER 70 PROJECTS

Woodenware for the Table
Trays, Servers & Shakers
Bowls for Every Purpose
Tables and Stands
Bed, Chair and Other Furniture
Boxes and Kits
Inlaid and Trick Turnings
Magazine Basket • Wall Brackets
Crib • Footstool • Salad Sets
Classical & Period Turnings
Floor Lamps and Table Lamps

More than 438 Photos & Drawings

Most complete book of useful, decorative, shop-tested lathe projects

You'll be amazed how quickly your woodworking lathe will pay for itself now. The help you've always needed is here. No more scouting through out-moded, old-fashioned books for worthwhile projects. No more lathe-turned "laughables." Now . . . with the new book "Selected Wood Turning Projects" on your bench you'll get the knack of turning right away. And you'll produce finished turnings that have professional quality.

There's nothing else like "Selected Wood Turning Projects." This book is the best work of scores of experts. Furniture designers, woodworking instructors, master craftsmen, cabinetmakers and many others contributed their wood turning designs and methods. These able craftsmen guide you step-by-step through each turning operation. They show you by photograph and drawing just how to turn correctly. They give you every bit of help you need for every single project . . . from selection of wood to application of finish.

Over 70 Blue-Ribbon Projects

It's packed with projects everybody wants. Biggest collection of usable, pride-of-the-home items you've ever seen. Besides a variety of distinctive bowls, boxes and trays you'll find exquisite tables and stands copied from treasured museum pieces. There's a fine 4-poster bed shown in elaborate detail. Wooden plates and covered dishes for tableware are included. Elegant lamps for the living room; novelty keg lamps for the playroom. Plenty more. Every project you turn out will make you the hero of the house. Look at this partial list:

Wooden Salad Plates
Salad Garnish Serving Set
Covered Woodenware Dishes
Turned Wooden Plates
Handled Snack Tray
Oval Walnut Tray Inlaid
Seven Wooden Ash Trays
Shell-Shaped Bonbon Dish
Little Brown Jug Shakers
Railbird Kitchen Shaker Set
Raised-Center Serving Tray
Novel Sombrero Snack Tray
Deep Mahogany Fruit Bowl
5-Piece Salad Bowl Set
Elegant Pewter-Inlaid Bowl
Pipe Bowl With Cork Knocker
Nut Bowl, Anvil & Hammer
Quaint Kettle-Shaped Bowl
Colonial Knitting Bowl Stand
Ship's Wheel Smoker's Stand
18th-Century Tripod Table
Antique Candlestand
Princess Sewing Stand
17th-Century Gate-Leg Table
4-Poster Bed of Maple
Early Amer. Ladder-Back Chair
Ship's Wheel Magazine Basket
4-Poster Heirloom Crib
Three Handsome Wooden Lamps
Colonial Floor Lamp
Spinning Wheel Table Lamp
Modern Floor Lamp
Cricket-Type Table Lamp
Keg Table Lamp for Playroom
Lady's Make-Up Box
Handy Small Sewing Kit
Decorated Trinket Box
Compact Spool Holder
Lamp in Matched Overlay
Oval-Shaped Flower Bowl
Antique Kitchen Utensils

More than 30 Authentic Classical and Period Turning Patterns

Worth the price of the book! This exclusive feature alone will become one of your prized possessions. Arthur Collani, an authority on furniture design, has contributed 30 turning profiles, or patterns, for you to copy. These shapes, among the finest examples of good turning patterns to be found anywhere, come from ancient Greek, Roman and other historical sources, as well as English, French and Early American. Templates which you can make from these patterns will have dozens of applications in the projects you build. One Greek design, for instance, is utilized as a lamp base. Others are equally adaptable . . . and irresistible!

Special Methods and Tricks of the Wood Turner's Trade

This is much more than a project book. It reveals hundreds of techniques the experts themselves use to get professional results. Shows you how to make tools, jigs and attachments that improve your work at once. Here are only a few of the many helpful extras this book brings to you:

How to Do Reeding and Spiral Turning
Turning Oval-Shaped Spindles
Making Wooden Rings on the Lathe
Automatic Centering Device for Stock
Prevent Slippage of Lathe Turnings
Precutting Center Holes in Lamps
Plans for Making Turner's Glue Press
Increasing Capacity of Your Lathe
Making Deep Bowls from Flat Stock
Simplified Way to Make Inlay Turnings
How to Make Off-Center Turnings
Cardboard Templates Save Time
Using Hollow Chucks to Hold Work

Turner's Finishing Techniques

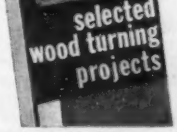
Sanding, Polishing & Finishing Under Power
Best Finishes for Wooden Food Dishes
Novelty Finishes: Silver, Gold, etc.
Proper Way to Apply French Polish
Newest Synthetics and Other Finishes

Why Is Wood Turning Such a Fascinating Art?

The art of wood turning has fascinated craftsmen for many centuries. Since man first learned to turn wood in the crudest sort of lathe propelled by a tree . . . and since colonial craftsmen produced their masterpieces on homemade foot-treadle lathes . . . the desire to turn artistic shapes has lured men of creative impulse to the lathe.

Today wood turning still is one of the most satisfying of crafts. It invites originality; it stimulates the artistic impulse; and it yields products that are unequalled in any other branch of woodworking.

Learning the art of wood turning today is easier than ever before. Modern, motor-powered lathes simplify the work and add to the skill of the wood turner. Even the beginner, after a few practice sessions, can produce creditable turnings.



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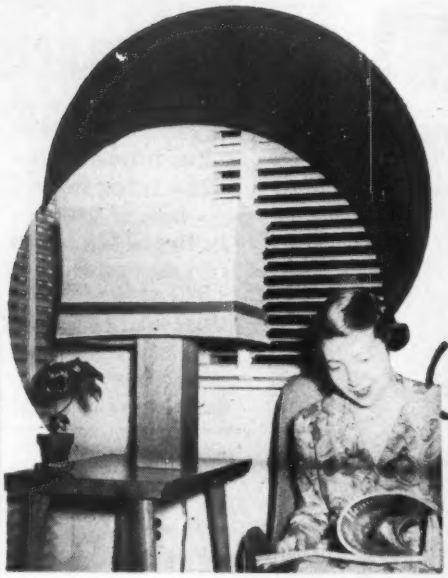
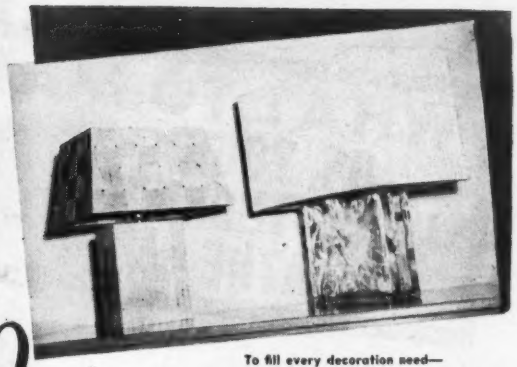


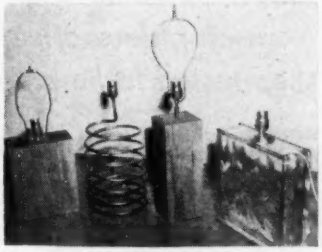


To fill every decoration need—

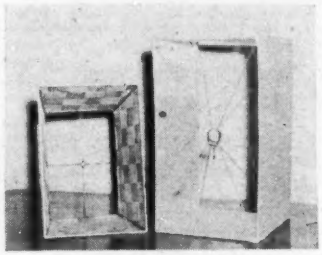
Lamps OF LEISURE

BY KENNETH JACKSON

This article is a series of hints on custom lamp making, rather than a complete "How to do it" feature. Only those construction details that might otherwise prove confusing are given.



Individually designed bases . . .



plus individually designed shades.

IF you need a custom tailored lamp, here's the answer. The tools and procedures used are simple. Materials needed are common—blocks of wood, copper tubing, glass blocks, wool yarn, strips of balsa, scraps of cloth. The resulting lamps can be as unique as your imagination, choice of materials, and decoration scheme allow.

The decoration possibilities of original creations are endless—twin lamps with contrasting yarn shades to accent the colors of the walls, furniture and drapes; large, dominant lamps to sparkle drab areas; solid color lamps for table decoration.

For your particular room sketch out the rough proportions of the lamp you want, select a lamp type that fits this drawing, adapt the general design to your decoration needs.

Wooden bases can be solid block, a whole piece of wood cut to the desired shape and finished to match the room's trim, or boxed (six pieces of wood fashioned into a hollow stand).

A hole is drilled lengthwise in the base and ⅛" threaded pipe inserted. A harp (curved wire shade support) is slipped over the section of pipe above the base and a lamp socket threaded to the pipe end. The cord is fastened to the socket terminals, run through the pipe, and led out through a cord-high notch which is cut from the center hole to the edge of the base.

For coiled copper bases ⅛" tubing is bent over a round object of the required diameter, the socket is attached to the end of the tubing, and the cord is run through the coils to the outlet. The tubing is bent with a slow firm motion, keeping the rounded object on the inside of the bend. Filling the tubing with sand before bending helps prevent buckling.

Glass blocks come in a variety of types—clear, textured, tinted—that can be made into distinctive bases. Most blocks also can be obtained with an opening in one end.

The simplest base is made by placing the block with open end up and fastening the lamp socket in this opening. A short piece of electrical pipe is threaded into the socket. Socket base, block-wide strip of metal, and lock nut are placed on the pipe in that order. As the lock nut is tightened it forces the strip of metal against the block's edges on either side of the opening and holds the socket firmly. The cord is run through the holding pieces and out the opening. The open end is covered with paper or shade-matching fabric which is cut in one section and placed between socket base and metal strip, or cut in two sections and slipped under the socket base after the assembly is completed. The edges of the covering are glued to the top of the block.

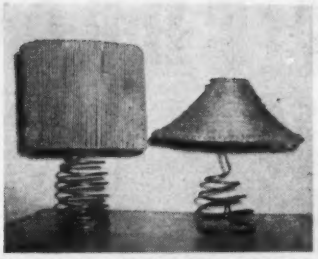
For more adaptability, a hole is drilled in the top of the block for the electrical pipe. The cord then is run out the bottom opening. Inserting and tightening the washer and lock nut can be done handily through this same opening. Most stores handling glass are equipped to drill blocks. Or the job can be done at home by using a tapered triangular file which has been ground to a point, in a regular hand brace. Use turpentine as a lubricant on the section being drilled.

When your base is completed, you have a choice of distinctive shades—fabric covered, woven balsa, wound yarn.

Woven balsa shades should be used only with wooden bases, while fabric and yarn covered shades are suited to all three types of bases. To have the lines of your lamp harmonize with those of the shade, angular shades should be used with rectangular-shaped wooden and glass bases, and round shades with coiled tubing stands.

Shade frames can be bought in a variety of shapes, built to specifications, or reclaimed from the attic by stripping the covering off discarded shades.

The type of frame connection is determined by the height the shade is to be above the base. For a compactly built lamp, thumb screw clamps are used that



Lamps can be designed for general illumination. Others can be used to light specific areas.

fit around the socket or wire holders which fit over the bulb. Shades on taller lamps are attached to the finial (bolt-like holder at top of harp) or raised by increasing the amount of threaded pipe protruding above the base.

A harp type connection can be made by fastening wire braces from the shade frame to a washer large enough to slip over the finial. For the socket type connection, support wires are attached to a thumb screw clamp.

Remnants of materials used for drapes or furniture covering can be made into distinctive matching shades. Coarse-textured material makes a pleasing contrast with smooth wooden or glass block bases. Fabric covering is sewed tautly to the frame and, for better light-reflecting qualities and more finished appearance, the shades are lined with light-colored, tightly woven cloth.

For the unusual balsa wood shade, the ends of the woven balsa strips are glued to the frame, narrow strips of balsa are glued to the exposed edges, and all corners are sanded smooth.

Yarn in the woolen covered shades must be woven tightly to give a solid appearance. With extremely thick yarn or on sharply tapered frames, the covering is held firm by weaving matching-color thread in and out of the rows of yarn. Contrasting bands of color and braided yarn borders can be used to add individuality to the shades.

SHELLAC HAS MANY USES

WANT to finish your wood panelling with a natural wood look? First seal the wood fibers with a thin coat of fresh, white shellac. A second coat will give greater protection and even better appearance. When dry, wax and you will have a panel of beauty.

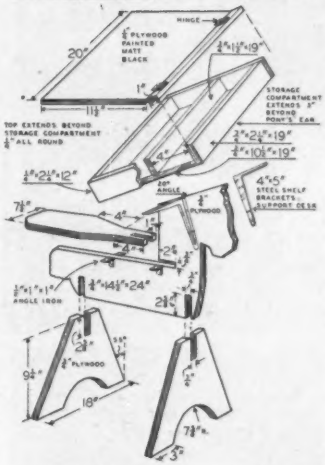
Do you take up your rugs for the summer? If you do, that's a good time to take care of the soft parts which rumple when walked on. After vacuum cleaning both sides, apply a thin coat of fresh shellac to the underside and let dry.

Does it annoy you to have cans leave a ring in places such as the kitchen? Give the bottoms of the cans a coat or two of shellac. When dry the cans will no longer leave marks.

Painting on paper or canvas has become a popular pastime. After the paint is applied and dry, a thin coat of fresh, white shellac will keep the paint clean and help resist possible surface flaking.

BRONCO DESK SET

By ROBERTA L. FAIRALL



EASILY-built desk set designed for cowboys and cowgirls aged two to eight. Desk top is a large blackboard hinged for easy access to storage space below for chalk and pencils. It's educational and lots of fun.

Build it from ¾" and ¼" plywood. Assemble with notched joints and steel brackets for extra strength.

Lay out the designs for the bronco, shown in squared drawing, on paper. Then trace to ¾" plywood. Measure saddle and members for desk directly on the wood.

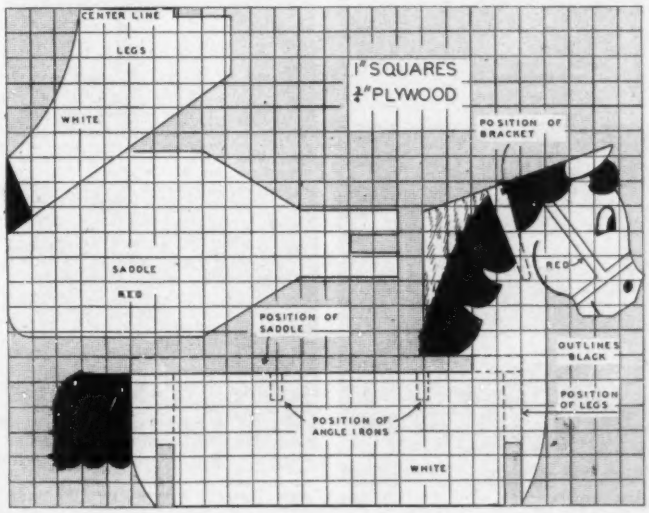
Saw pieces just outside the lines and sand smooth.

Assemble all joints with fish glue. Hinge the two sections of the desk top. Put together the storage compartment with ¾" brads driven through the ¼" plywood and No. 3 1½" flathead wood screws through the ¾" material. Countersink all screw heads. Nail the 1" strip of desk top down to back of storage compartment. Screw the shelf brackets in place on each side of bronco's head, aligning them even with the 20° slant at top of head. Screw four inside corner angle irons in place, two on each side of back and screw saddle in place. Glue leg and body sections together. Join storage box to head and brackets.

Sand smooth and give two all-over coats of white shellac. Paint desk top with flat black and little bronco with white enamel. Paint saddle red; mane, tail and hooves black. Leave storage box and the portion back of head natural color of wood.

BILL OF MATERIALS

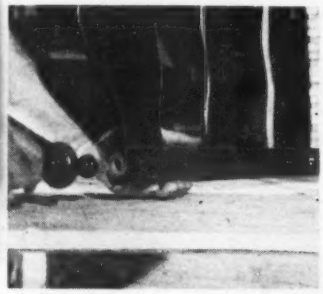
1	Desk top	¼" x 12½" x 20"
2	Desk sides	¼" x 2¼" x 12"
1	Desk partition	¾" x 1½" x 19"
2	Desk ends	¾" x 2¼" x 19"
1	Desk bottom	¾" x 10½" x 19"
1	Saddle	¾" x 7½" x 16"
1	Body of bronco	¾" x 14½" x 24"
2	Legs	¾" x 9¼" x 18"



DON'T THROW

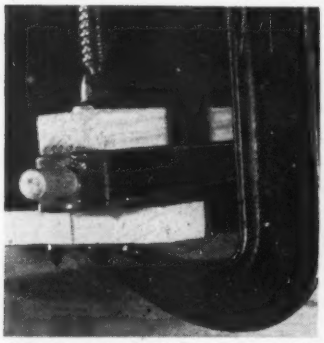
These chairs were a mistake when new. Years of hard use made them worse.

We enjoyed them after they were reformed.



To start the reshaping, loose spindle tops were replaced by dowels, solid spindles were sawed off.

A piece of heavy cardboard trimmed to the curve of the next-to-top slat served as a pattern for marking the top one.



Where a spindle had split a leg top, a tight dowel forced glue into the cracks. These were then closed by a "C" clamp. The dowel was later finished flush with the leg top.

A coping saw cut to the line when the chair was clamped to a bench top. After sawing, the slat was rounded with a rasp and sandpaper. The cut-off piece was saved for use as inlays.

WE BOUGHT some California-Spanish dining chairs years ago. They were mistakes. The shape, the seats, and the dark varnish were just plain wrong. Finally I reformed them. Now they fit in.

Start your reform by imagining the ideal chair. Then plan minor changes toward this new look. We pictured our misfit chairs transformed into early American ladder backs. They would be closer to this ideal without their spindle tops and arched top slats, and with a string seat. A lighter finish would better fit our redwood house.

First, remove any unwanted parts. Then reshape and repair the woodwork. Remove the old finish and put on the new. This sequence gives new and old wood the same discoloration from paint remover. Renew the seat as a final step.

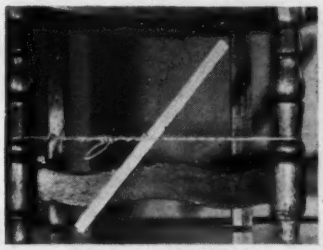
Each reshaping job is an individual problem. The pictures show how I solved one of them. Repairs are more standardized. First take out the wobbles. Avoid opening old joints that are solid, but carefully work apart any loose ones.

It helps to shrink the wood first. Store the chair for a few days in dry heat like a summer attic, or over a hot air register in winter. Scrape the old glue from the open joints to expose clean wood. Use a drill press to remove broken dowels cleanly; replace loose ones. Groove the new ones so that extra glue will not split the wood when clamps are tightened. When all open joints are clean, glue, as-

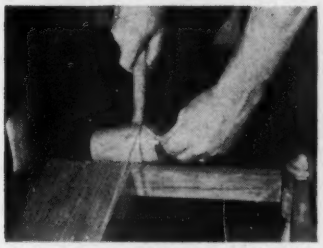
THAT OLD CHAIR AWAY!

Let it live another day...

By G. VAN DEURS



A cord looped as a Spanish windlass is easier to apply than clamps on round legs or for diagonal pressures.



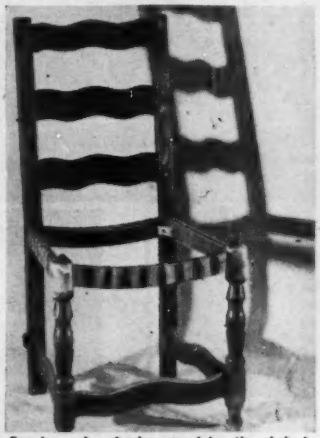
Cord was first wrapped around the side rails. After each four or five turns it was tightened by crossing a turn around a mallet handle which then served as a lever.

semble and clamp them. Put the chair on the floor when you take up the clamps. Use diagonal clamps if necessary to keep all four legs on the floor until the glue sets.

Now complete surface repairs. Sand shallow dents to blend into the surrounding surface. Smooth rough edges. Glue inlays into chipped places. Shape these so they taper with the grain. Avoid cross-grain cuts. Fill small sharp edged blemishes with Plastic Wood. Sand all patches smooth with the old surface.

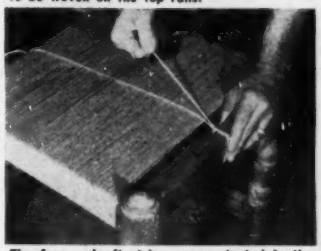
After repairs are complete remove the old finish. Do this outdoors if possible to avoid unpleasant fumes. A paste type paint and varnish remover used generously in accordance with the maker's directions is recommended. A putty knife is good for getting the muck off flat surfaces. A handful of steel wool is better in the grooves of turned legs. Use rags for a final wiping and then scrub the entire chair with turpentine to remove all traces of the paint remover.

Allow the chair to dry, then sand it 'til it feels satin smooth. I used 1/0 for the start and finished with 2/0. Wipe off the dust and apply your selected finish. On the Philippine mahogany I used a coat of paste wood filler, three coats of Satinlac, and two of wax. I sanded with 2/0 paper after the filler was hard and rubbed lightly with 000 steel wool after each coat of Satinlac. Each coat of wax was polished with a fleece buffer.



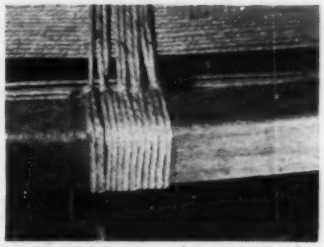
Repairs and reshaping complete, the chair is ready for the removal of the old finish. Plastic Wood at front leg tops will blend into the finished work.

With the new finish set, chair is ready for seat to be woven on the top rails.

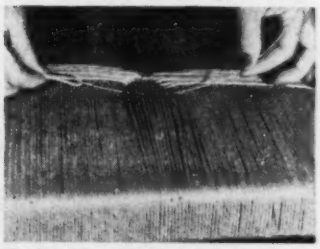


The fore and aft strings were started in the center. They were secured at both ends by looping them around themselves. The mallet handle was used to pull them tight.

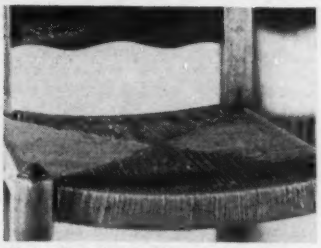
A short piece tied the two center cords together and to some of the bottom cross strands.



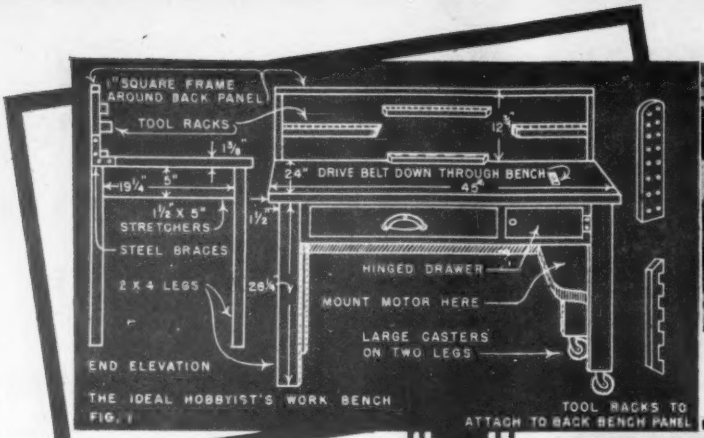
A spacing turn was put around the longer front rail between each four cords.



A wire hook pushed through the cross cords was used to pull a bight of fore and aft cord.



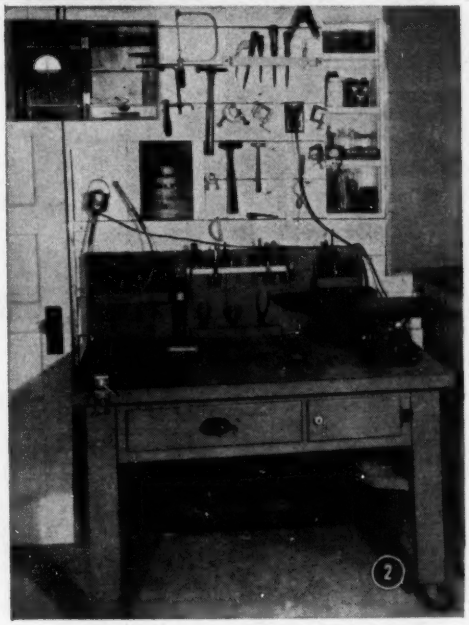
The finished job resembled a rush seat.



THE IDEAL HOBBYIST'S WORK BENCH
FIG. 1

A grade school boy operating the saber saw.

My hobby work bench and some of my equipment.



HOW TO Set Up

GRADE school teachers all over the country have asked us to discuss in this series crafts that interest the grade school student, and equipment that is safe for them to use. So part of this installment will do just that.

First requirement of any craft is a suitable bench. For the introduction to craft work in the schools we suggest building a long bench along any wall where the light is adequate. It should be solid and of table height so that the students may sit while working. With a bench 30" high a boy may sit or stand as he chooses.

The bench should be long enough to accommodate the number of students who will participate, and should have adequate drawer space and tool racks. Drawing Fig. 1 and photograph Fig. 2 illustrate my own small hobby bench, developed after years of trial and error.

The bench is large enough and solid enough to handle any and all hobbies: jigsawing, wood carving, leather tooling, delicate metalcraft and jewelry making, clay modeling, and others. It has racks attached to the back panel to hold to hold small tools. Extra tools are stored on the wall above, or in the drawers.

My bench is equipped with a saber saw driven by a motor mounted under the bench. This machine has a chuck that will take both saber saws and machine files. The small drawer—for storing saw blades—is hinged for convenient access; it swings out. The shallow drawer does not go in far enough to strike the motor.

The bench top is glued up 1⅜" plank. Two large casters are attached to the legs on one end so that the bench may be moved to any position—often necessary to get the proper lighting for fine detail work. The two solid legs hold it firmly in place once it is positioned.

The tilt top saber saw is an excellent machine and is one of the safest pieces of equipment made. Fig. 3 shows a grade school boy operating my saber saw. This young fellow delivers our daily paper; he is as much interested in my shop as I am. He'll make a craftsman some day.

For the school with a limited budget, where inexpensive equipment must be used, a lot of work can be turned out with the ordinary coping saw. It is safe and efficient. The coping saw, like the jig and saber saw, should be set up with the teeth pointing down. The cut always should be made on the down stroke.

The next best bet is a power operated magnetic type coping saw. This saw sells for $5.85, which includes drawings for building a stand to convert it into a small jig saw. Our boy student is shown operating one of these saws in Fig. 4.

Almost any jig saw is safe enough for a grade school boy. Fig. 5 shows an operator using one of the larger magnetic jig saws. This is an excellent machine and does beautiful work. Fig. 6 shows one of the smaller power-driven jig saws. This, like most of the smaller machines, takes a pin end blade which make it easier for small fry to set up.

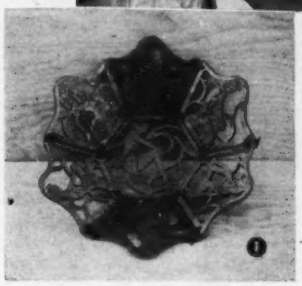
Jigsawing is the most fascinating of all wood work, and even the beginner can saw out all sorts of interesting pieces. The basket shown in Fig. 7 is all cut on the jig saw. The piece is composed of seven pieces cut from birch plywood and laced together with leather to form a basket.

Some students will be interested in

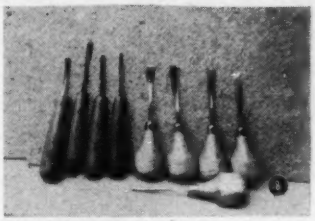
A grade school boy operating a small magnetic type jig saw.

Adult operating a larger magnetic type jig saw.

Cutting out a scroll on a small type jig saw.



Jigsawed biscuit basket was cut from 1/8" birch plywood.



Linoleum carving tools at left; wood carving tools at right.

A HOME WORKSHOP

(Part 6)

By DICK HUTCHINSON

wood carving, so let's acquire a set or two of carving tools. Fig. 8 shows a set of linoleum carving tools and a set of wood carving tools. I like the linoleum carving tools best for wood carving, as they will do finer work. I recommend them for school use as they are safer.

One of the best projects for the beginning is silhouette carving, since this is done while the material is lying flat on the bench. Fig. 9 is a drawing in outline of a cowboy and his horse. Sketch the outline on a piece of board. White pine is easy to carve but a harder wood is preferable. ¼" birch plywood is excellent.

Cut the outline down into the wood carefully with a sharp knife or with a straight edge chisel. Then begin with the curved gouge and carve out the background, taking care not to carve deep enough to cut through the first veneer. Carve as evenly as possible and leave the tool marks of the chisel which will result in a beautiful background.

Fig. 10 is a boy's tie holder with a cowboy silhouette. Give the surface of your finished silhouette a coat of white shellac and finish by painting the silhouette with flat black oil paint.

Fig. 11 shows the author carving a butterfly on a ¼" white pine board. Note how the gouge is held down with the finger of the left hand to prevent the tool's slipping and ruining the piece. A study of this illustration will give you an idea of how the background of a silhouette should be carved out.

The flexible shaft shown in Fig. 2 above the bench, at the left, is without doubt one of the most versatile little machines ever built. Any grade school boy or girl can operate it without danger, and it can be used for many things. Every school shop should own at least one of these machines for wood carving, drilling, grinding (with mounted emery wheels) and any number of intricate jobs.

The case at the right of the flexible shaft in the photograph shows the assortment of tools I use with my machine.

Fig. 12 shows the author carving a horse from white pine. After sawing it out on the jig saw this horse was completed with the flexible shaft. For wood carving small rotary cutters are fitted in the collet chuck on the flexible shaft. All sizes and shapes of cutters are available at any supply house, and these are used to do all of the intricate carving. If you use a flexible shaft ask your dentist to save his discarded cutters for you, otherwise he will throw them out. Many of these cutters, although too dull for dental work still are excellent for many jobs around the shop.

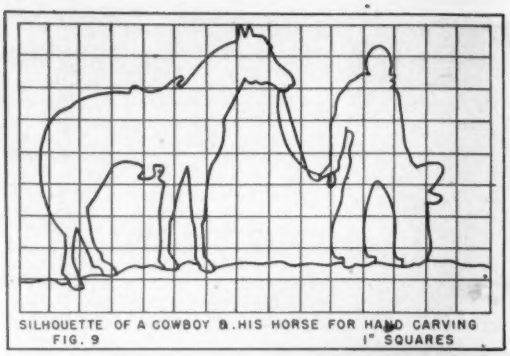
When you buy a flexible shaft include as many different size collets as are available in order to use tools with different size shanks. Also buy the drill stand, particularly for school use. With this little stand the shaft is clamped in position in the stand to provide a solid drill press for small drilling. Fig. 13 shows our boy using the flexible shaft drill press for drilling holes through plywood through which to thread saw blades for jigsawing. It's as safe as a pencil.

Every shop also should have a good substantial metal working vise. The vise shown in Fig. 14, is ideal for all-around work. This vise swivels to any angle, has built-in pipe jaws and a cut-off stake. In this photo the operator is shown cutting a length of pipe with the hack saw. Every student should be taught what both of these tools are for and how to use them.

In addition to our large metal working vise we also have a small clamp-on vise that we use for fine detail work on the hobby bench. This vise is shown in Fig. 15. Here the flexible shaft, fitted with a small mounted emery wheel is clamped in the little vise to provide a good steady grinding machine.

Pliers are essential for any sort of an enterprise, yet these tools are misused more than any others—not only by the youngsters but by oldsters as well. There are good pliers made for practically every job, and this should be taken into consideration when using them. When selecting pliers pick the ones that will do the most for you in whatever you are doing, then take care of them.

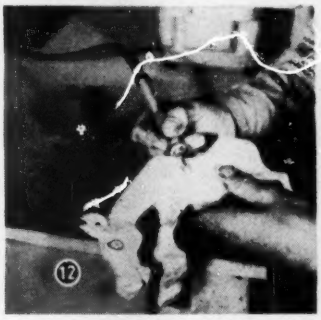
Some of my assortment of pliers have been shown in the background of illustrations in preceding chapters. However,



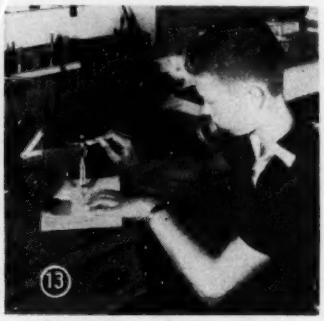
SILHOUETTE OF A COWBOY & HIS HORSE FOR HAND CARVING
FIG. 9 1" SQUARES

Carving out a butterfly on white pine with linoleum carving tools.

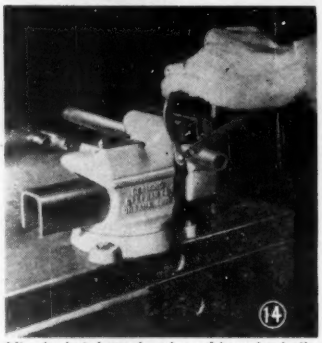
Boy's tie holder with cowboy silhouette. Subject and frame are black.



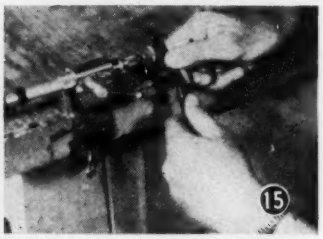
The author carving a horse with rotary cutters mounted in flexible shaft.



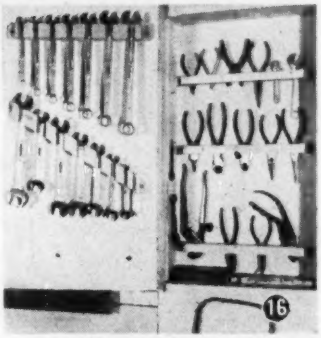
Using the flexible shaft drill press to drill insertion holes for jigsaw blade.



After having clamped a piece of iron pipe in the vise, the operator cuts it to length with the hack saw.



Small vise for fine detail work, on my hobby bench.



At right are shown some of the most essential pliers.

we are again showing in Fig. 16 a part of the pliers I use.

We are illustrating in Figs. 17, 18, 19 three very useful pairs of pliers to illustrate the do's and don'ts. Bear these pointers in mind and your pliers will last a long time. Good side-cutting pliers—of the size to do the job—are best for all-around cutting. There are few jobs that you can't get at with these pliers. A pair of angle nosed pliers are a necessity in any craft work, for there are so many places that you just can't get at with the straight nose.

Other pliers that are essential are small flat nose, duck bill, long chain nose, round nose, and a pair of pistol grip slip joint pliers. Others may be added as the need arises.

We are going to enumerate some of the small tools with which our little hobby shop is equipped, and what most of these tools are used for. A great variety will be needed for the school shop as each student may want to take up something different.

First we have our bench equipped with a motor-driven saber saw. This is placed on the right hand end of the bench where it does not interfere with work being done on the bench. A small jig saw may be substituted for the saber saw. The flexible shaft is the only other machine, but with its versatility it can be used for wood carving, drilling of wood or metal, grinding, filing of metal (with ball end files) and for buffing and polishing.

In hand tools for wood working we have a coping saw, carving chisels, wood rasps, "C" clamps, hand drill. And in supplies we have hide glue, resinous glue, Plastic Wood, sandpaper and steel wool, small nails and brads, and an assortment of wood screws.

For metalcraft we have a jeweler's saw, an assortment of ball peen and planishing hammers, a variety of metal tooling punches, small files of all shapes with handles, 12 assorted files for the saber saw, buffing and polishing compounds, brass, copper and aluminum rivets, and spraying lacquers.

For leather tooling we have a set of leather tooling tools. For clay modeling we have modeling clay, a set of modeling tools, and a supply of plaster of Paris.

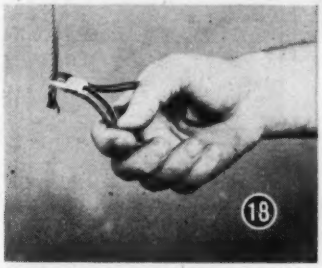
Although most of the high schools teach clay modeling, little of this work ever has been done in the grade schools—and we wonder why. It is educational and, if a student is artistic, it gets him started in an interesting work much earlier. Books and materials for this work are available at any of the art supply houses.

For general use our equipment includes

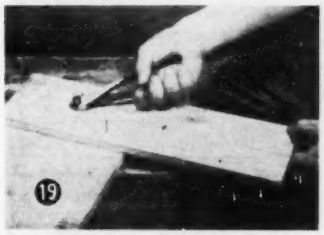
pin vises, a clamp-on bench vise, pliers, screwdrivers, tweezers, paint brushes, small wrenches, micrometers, calipers, squares, protractor, button dies and taps, rulers, etc. Fig. 20 shows measuring equipment with which everyone should be familiar.

In the next chapter we will tell you about the wood lathe: How to operate it to get the most out of it, and how you can build a small face-plate lathe right in your own shop.

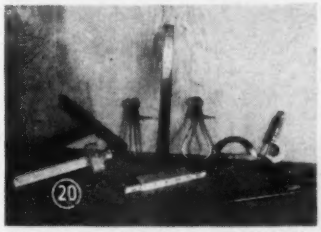
The angle nose pliers reach places that can't be reached with the straight nose type.



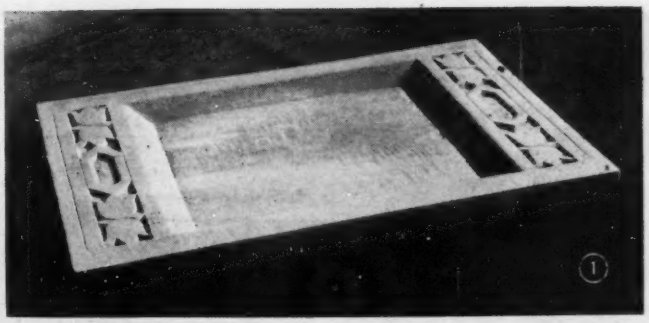
Don't try to cut wire or other heavy materials with pliers, as this ruins them.

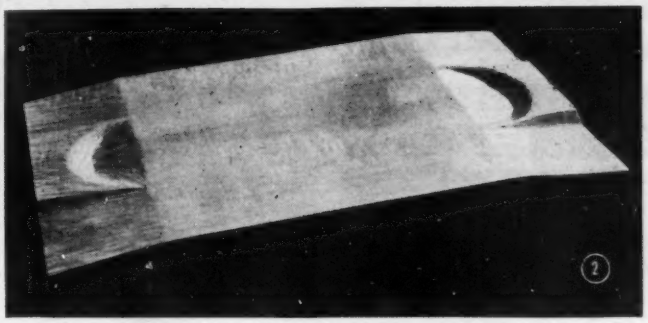


Side cutting pliers are fine for cutting off nails. Make sure yours are large enough for the job.

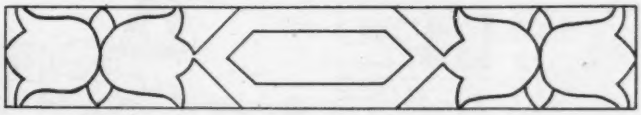


Sliding "T" bevel, marking gauge, 12" scale, inside and outside calipers, 6" rule, protractor, micrometer, combination square.

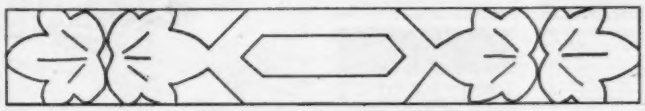




END OF TRAY FIG. 3



END OF TRAY FIG. 4



"RIGHT ANGLES ON NATURE" TRAYS

BY EDNA McFARLAND

THIS tray (Photos 1 and 2, front and back views) was made from a white poplar board 1" x 12" x 18". The design for this and the following ones were inspired by nature: Fig. 3, a bluebell; Fig. 4, an ivy leaf; Fig. 5, an oak leaf and acorns. The light areas in Fig. 6 designate the carved out areas in Fig. 5. In each design make the center box fit the thumb.

Fig. 7 shows the tools used, although a mat knife could be substituted for the small skew and chisel (b, g) and a wooden potato masher for the mallet.

Begin by marking out the entire tray accurately. (Fig. 8.)

Then fasten the board firmly to the work bench. (Fig. 9.)

Start with the end design. Cut the outline around the design to a depth of about 3/16". Use the small skew (b) or mat knife. The cut may be straight or beveled. Take out the background with the small gouge (c) to the depth of the cut. Finish the other end design the same way. Keep the tools sharp for a clean cut. Retain the chipped effect; do not sand. The lines showing in Fig. 1 were made with the V-tool (f).

Now you are ready for the depression in the main part of the tray. In Fig. 8 cut the entire border line of ABCD with the chisel (g) or mat knife to a depth of ¾". This is called the stop cut. (Fig. 9.)

Then with a ½" gouge (d) hollow out this rectangle to the level of the cut, working evenly over the entire surface.

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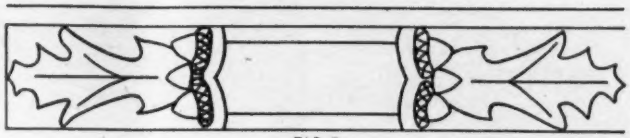

FIG. 5

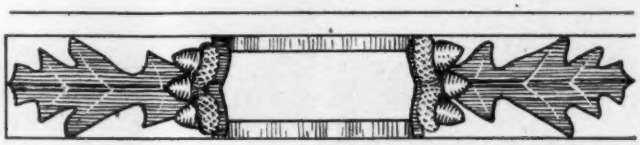

FIG. 6

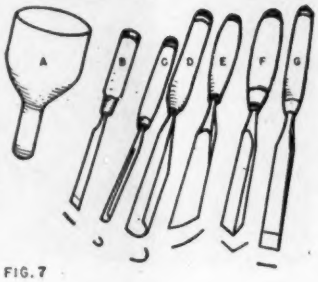

FIG. 7

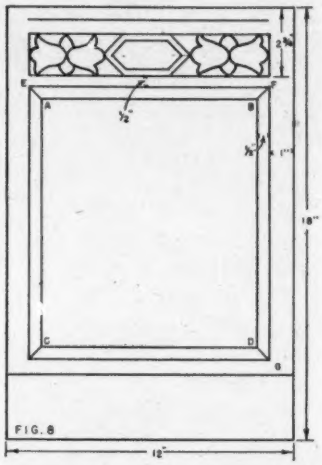

FIG. 8

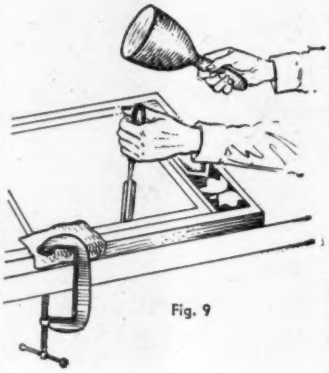

Fig. 9

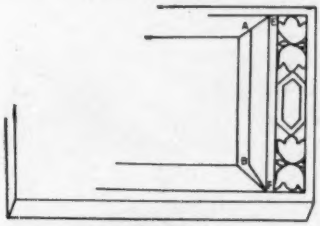

Fig. 10

Level with a ½" fish tail gouge (e).

Next comes the ½" slope. Referring to Fig. 8, slope FG up to diagonal end lines BF and DG.

When this side is completed slope the end EF over to diagonal line EA. Make a neat corner at BF.

Repeat this procedure until all the sides and ends are finished, being careful not to dig into the bottom of the tray in the process.

Turn the tray over and, according to Fig. 2, draw the back design and chip it with the ½" gouge (d).

Sand the uncarved areas, front and back. Remove all sawdust by rubbing with clean hands or soft cloth. Apply a thin coat of Johnson's floor wax (paste form). Let dry 20 or 30 minutes; polish briskly. Apply a second coat, dry and polish. Repeat this procedure until you have built up four or five coats.

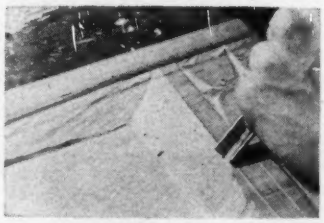

Fig. 11
Shows how to hold the gouge.

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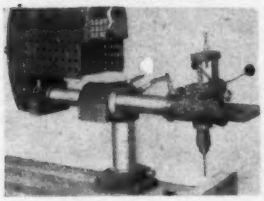

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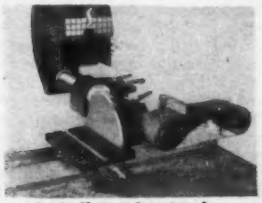

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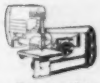

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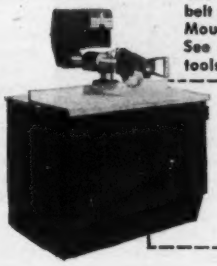

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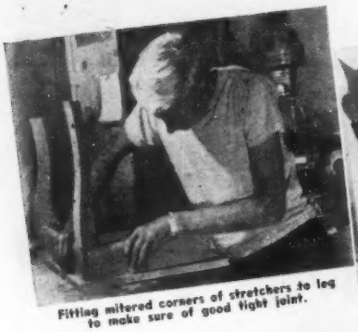
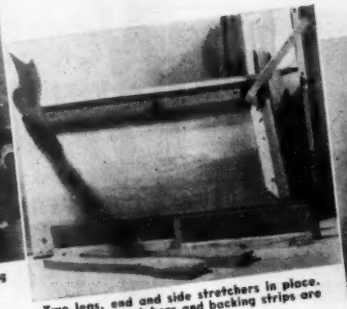
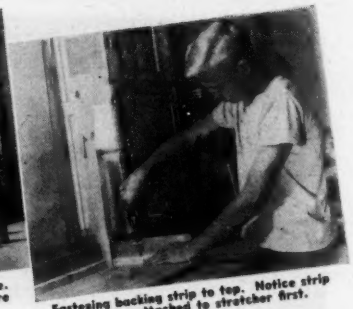


Fitting mitered corners of stretchers to leg to make sure of good tight joint.



Two legs, end and side stretchers in place. Other two stretchers and backing strips are shown.



Fastening backing strip to top. Notice strip has been attached to stretcher first.

To insure tight corners, clamps are tightened and end screws in backing strip are tightened down.

Fastening top rail to top. Tighten all screws evenly. Glass is in place.

Fastening corner block in place to strengthen leg and table. Use both glue and screws.

SMALL COFFEE TABLE OF PLEASING DESIGN, SIMPLE CONSTRUCTION

BEGIN with the top as shown in Fig. 6. Cut pieces and glue to size as given. The author used two pieces 7½" wide and 28" long and tried to match grain for best appearance. You can do a lot for beauty here by carefully matching grain regardless of what kind of wood you use. After top has been glued, lay aside while you make the rest of the parts.

Now rule in inch squares on a piece of heavy paper or cardboard and carefully lay out the leg pattern. Cut out the pattern and trace around it on the wood to be used. You may lay out the legs singly and use either a band saw or a jig saw, or you even may use a compass or coping saw. If you haven't any of these, use a draw knife. The author fastened four pieces together by driving nails through the waste portion of the wood and then sawed all four legs at once on the band saw.

Sand the edges of the legs. If you have a lathe, it will save you a lot of work to turn a cylinder of softwood to about 3½" in diameter and 8" long. Cut a slot from end to end about ¼" deep and ½" wide. Fasten one end of a regular sheet of garnet paper in the slot with a couple of small carpet tacks. Wrap sheet around cylinder in direction opposite to that in which the lathe turns and tack free end into slot with several small carpet tacks.

This small coffee table of pleasing design fits in well with other styles of furniture.

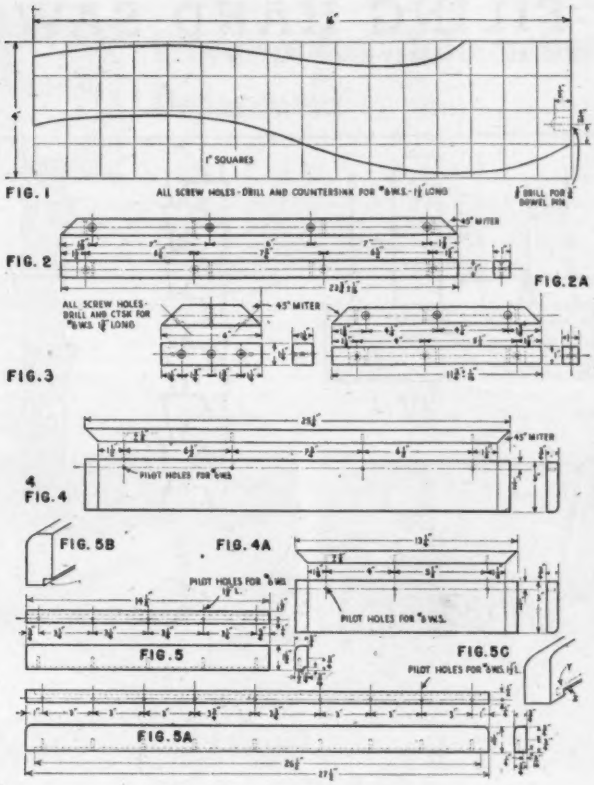
Be careful to drive tacks through both ends of the sheet of sandpaper.

You can start your lathe with this drum in it and use it to sand the edges of the legs very nicely. Just be sure to keep moving the work over the drum to prevent cutting too deep in any one spot. Start with No. 2/0 garnet paper, follow with No. 4/0 and finish with No. 6/0. Also use these same grades for all your sanding on the table.

Now bore the holes for the dowels as shown in Fig. 1. Next, lay out the stretchers as shown in Figs. 4 and 4A. Lay out the backing strips as shown in Figs. 2 and 2A. A good way to do this is to fasten the backing strips to the stretchers, and when you miter the stretchers the backing strips also are mitered and are cut to the proper length in one operation.

The backing strips are just scrap wood 1" square and long enough to fit. Of course, you can drill holes for screws in the backing strips before fastening to stretchers. Use glue as well as screws to fasten the strips.

Size of screws and holes for same are given in respective figures. Spacing of screws is not important except for those at the ends. Be sure to use enough screws. Other than the screws at the ends, the screws should be placed approximately equidistant. After the stretchers are mitered and cut to size, finish the bottom edges as you wish. The author used a well known quarter-round cutter made to fit on a circular saw, to round the edges. This gives a pleasing and simple



appearance. You may shape the edges by hand if you wish, with a plane and sandpaper. Or if you have a shaper, use that.

Next lay out and cut the corner blocks as shown in Fig. 3. These corner blocks are cut to dimensions from scrap material.

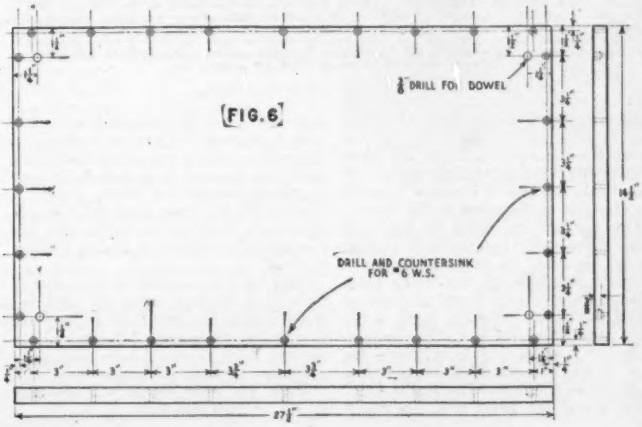
Lay out and cut the top rails as shown in Figs. 5, 5A, 5B and 5C. The author used butt joints; the rabbet in the side pieces must be finished by hand as shown in 5C. If you use your circular saw or jointer for this cut be sure to use stops so as not to cut to the ends. The end pieces may be rabbeted from end to end. All dimensions are given in the drawings. The top edges of top rails may be rounded as were the bottom edges of the stretchers.

Before assembling the top rail, let's do some more work on the top which now should be in good condition for working. Cut to size as given in Fig. 6. Drill holes for screws and dowel pins as shown. Here again, the exact spacing of the screws is not important except for the screws at the ends. Be sure to use enough to insure a tight fit between top rail and top of table. Now plane the top true and sand. Time now to finish working with the top rail. Place some wax paper on the top to keep glue used in top rail from getting on table top. Place top rail in place and fasten temporarily with a couple of screws in each piece. Spread the corners a little and apply glue; clamp the corners tightly until dry.

Have a piece of 3/16" plate glass cut to fit the top. With it you are ready to assemble the table. Put some paper on your bench and lay the top on it upside down. Apply glue to the top edges of legs and to the dowels and corresponding dowel holes. Place legs in place. Apply glue to ends of stretchers and backing strips and fasten them in place temporarily with a couple of screws near the center of each piece. Hold corners of stretchers tightly against legs with clamps, while you drive the rest of the screws in the top. This method is shown in the photographs. Fasten corner blocks as shown with glue and screws. Carefully sand the entire table, including the top rail which is not as yet fastened in place.

Use any finish you desire. The author used a neutral filler which was allowed to dry for a day. Next, the whole table was sanded again with fine sandpaper. A mixture of equal parts of linseed oil and pure turpentine was applied liberally. This was allowed to dry for a day. Then it was rubbed well with rottenstone and a little more of the oil mixture. Finally a good coat of wax was applied.

Lay the plate glass on top of table and fasten top rail in place as shown in the photographs.



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THE ART OF FILING HAND SAWS

BY L. J. SMITH

(THE RIP SAW)

WHEN one watches a good mechanic file a saw it appears simple. But there's knowledge and experience behind the skill which is required to do a good job.

First step in saw filing is to know the proper shape of cross cut and rip saw teeth—and why. First, consider the rip saw since it is simpler than the cross cut saw. The rip saw does not have to cut across the grain of the wood, but makes a groove or rectangular channel along the grain, dividing the board into two strips.

Fig. 1 shows the end view of a portion of a rip saw (enlarged), illustrating how the teeth cut into the wood. Note the width of the kerf in the lumber which is considerably more than the thickness of the saw blade. It is made by the set of the teeth, allowing ample clearance so the saw blade will not bind or stick in the wood. The amount of set must be more if the lumber is green. In most hand saws the blade is ground to a taper to give added clearance.

Fig. 2 is a top view of rip saw teeth. Note that the front face of the tooth is at right angles to the blade of the saw. Also, that the teeth are set alternately, one tooth bent slightly to the right and the next to the left, etc. The top part only is bent. If one should try to set the major portion of each tooth many would crack and break off because of the tempered steel.

Fig. 3a shows the shape of the teeth and how they cut into the wood. The teeth at the end of the saw are made smaller for a few inches to make it easier to start the cut.

Now for the filing. First step is to joint the points of the teeth lightly with a worn flat mill file to bring them all to the same height. A jointer can be made of hard wood to hold the file. If a tooth is still too short here and there don't joint too much; let it go until the next filing (see Fig. 4).

Should the saw need setting, now is the time to do it unless the teeth have to be jointed a lot. In that case it is well to partially file the teeth before setting. When operating the saw set be sure to adjust to the size of the teeth of the given saw. If it is an 8-point saw set the anvil of the set to that figure. Also be careful to give each tooth the same pressure in setting, and do not raise or lower your hand position in the process.

Having jointed and set the teeth, place the hand saw in the clamp with the blade of the saw in a vertical plane and with the saw teeth just projecting above the upper edge of the clamp. Height of the clamp from the floor is important. It varies with the individual, and should be such that the forearm of the hand holding the file is in a horizontal or slightly downward position.

Begin at the end of the saw and continue from tooth to tooth, on to the opposite end. Be sure to hold the triangular file always in the same position—at a right angle to the row of teeth; also at a right angle to the vertical blade of the saw. In other words, in a horizontal position. Keep in mind that you are filing against the vertical cutting surface of each tooth, the line of pressure being in the direction of the arrow in Fig. 3b.

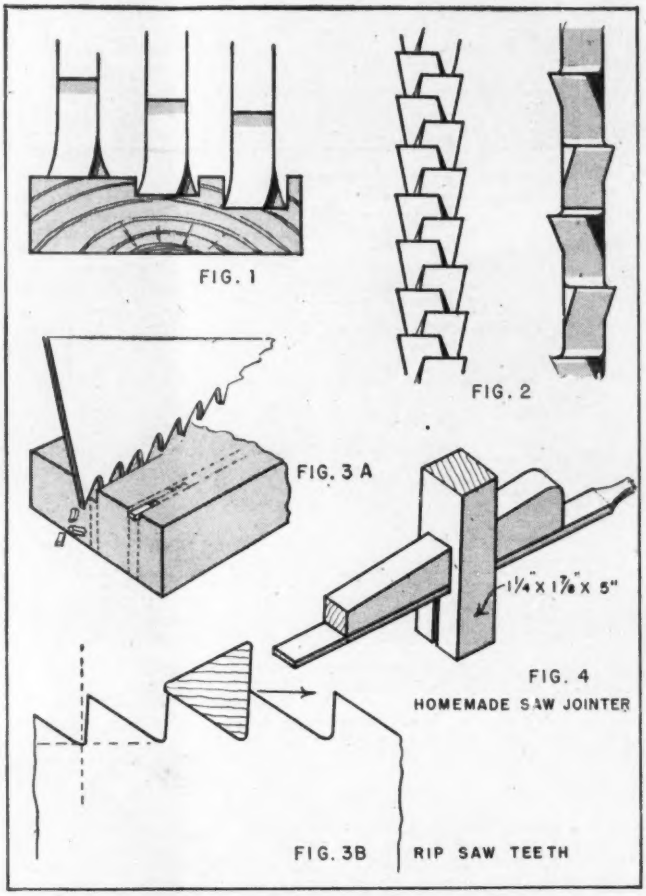
You are not interested in the back slope of the teeth; just use it as a guide for the file. Since the center of the file is about in line with the top of the teeth exert a slight counter clockwise twisting action to prevent filing the front of the teeth more at the top than at the bottom. If the saw is to be used for hardwood the front of the teeth should be kept vertical as shown by the dotted line in Fig. 3b.

Use one of the larger saw files rather than the short slim tapered kind. File each tooth until the flat top surface just disappears. One extra stroke makes the tooth too short so it cannot do its part in cutting through the board.

Filing all the teeth from the one side produces a wire edge on the far side; but it comes off quickly after ripping through a board.

Good light is essential. Put the vise in front of a window where the light reflects up from the little flat surfaces made by jointing the points of the saw. If an electric light is used, have the globe above and in front of the saw vise.

Note: The next article will tell how to file a cross cut saw.



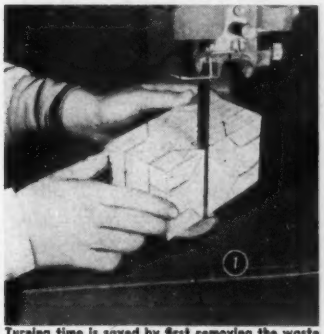
1—END VIEW OF SAW (ENLARGED): Looking lengthwise of the blade, as the rip saw cuts into the board, observe width of kerf and that set of teeth allows for blade clearance. 2—TOP VIEW OF TEETH (ENLARGED): Look along the line of teeth. Edge of rip saw is similar to rows of chisel edges, set right and left. Looking down on teeth, notice rip teeth are filed straight across face. 3a—HOW A RIP SAW CUTS: Rip teeth cut like vertical chisels, alternately cutting loose small pieces of wood and pushing out.

Woodworkers' Information Department

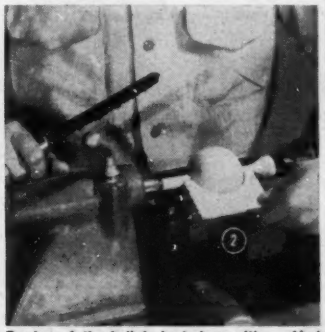
By Frank Hegemeyer
Associate editor

Do you have any particular woodworking problems? We are here to help you with the techniques involved in the use of hand or power tools or furniture constructional problems. Please address your questions to Frank Hegemeyer and enclose a stamped reply envelope.

The following techniques on turning wood balls have been prepared in answer to the many requests from readers desiring this information. The dimensions designated in the drawings apply to making balls 3" in diameter. Since the ultimate diameter of the ball is based primarily on the size of the cardboard template (Fig. 1) diameters other than this are achieved simply by changing the 1½" radius and then adding the border lines so that they are ⅛" outside the dotted circle on all sides. In accordance with this the 1½" radii which apply to the plywood template (Fig. 3) and sanding block (Fig. 5) must be changed in like manner.



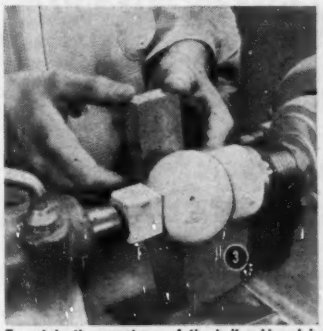
Turning time is saved by first removing the waste material as shown here. For safety reasons the guide bracket should be positioned as close to the work as possible but was raised here to show the operation more clearly.



Turning of the ball is best done with a chisel having a concaved edge but if one is not available, use either a diamond point or skew chisel. Do not rush the work; check frequently with the template to obtain a perfect sphere.

FOR a 3" diameter ball a piece of stock measuring 3¼" square by 6" long is required. The outline of the template (Fig. 1) is scribed on adjacent sides of the material and bandsawed along these lines as shown in Photo 1. When making the initial cuts on one side of the stock leave about ⅛" at the base of the angular lines uncut in order to hold the waste material intact; the latter serves as a support when making the cuts on the adjacent side. After sawing through the uncut portions to remove the waste stock, the turning block takes on a shape as shown in Fig. 2.

The block is then turned just sufficiently to remove all flat surfaces and the shafts, or supporting ends for the ball, reduced to a diameter of ⅝" as indicated in Fig. 3. In turning down these shafts, leave a 3" wide portion in the center for fashioning the ball in the round. When making the plywood template, the radius line is scribed with the pivot point of the compass positioned 5/16" outside the semicircular opening as shown. The ball section then is dressed down to conform with the curve of the cutout until the two narrow straight edges come to rest on the shafts on each side of the ball as pictured in Photo 2. The shafts are then severed from the ball at the points indicated by the dotted lines. The projecting parts of the shafts remaining on each side of the work are removed with a wood file, being careful not to cut inside the periphery of the sphere.



To retain the roundness of the ball achieved in the turning process manipulate the sanding block in an up-and-down and a side-to-side arcing motion in the smoothing process.

Sanding of the work can be done in the lathe with the setup shown in Fig. 4. Here a specially made faceplate and wood block is used to support the ball. A rubber shim provides traction between the ball and block to force the latter to turn, also preventing flattening or marring the work at this point. A medium grit paper is glued in the hollow of the

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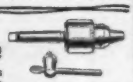

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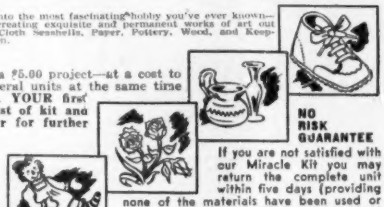

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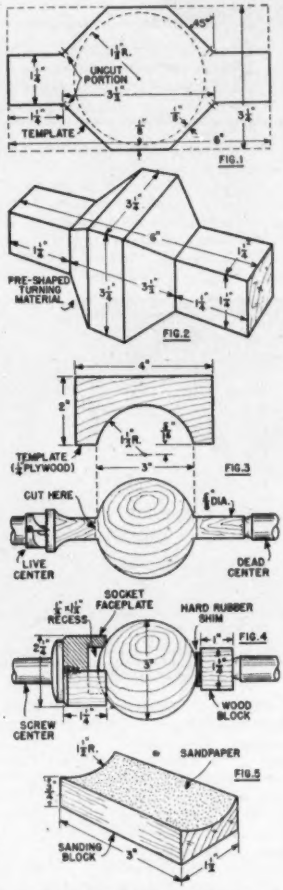
sanding block (Fig. 5). The device is best manipulated if grasped in the manner shown in Photo 3. To retain the roundness of the sphere it is suggested that it be rotated frequently during sanding so as to reach all parts. Smoothing is done by replacing the coarser grit paper with a finer grade.



Q. While talking to an amateur artist recently, I learned that picture frames are at a premium. I have on hand some hardwood molding from which I've made several frames. The tools available for this work are a miter vise and a circular saw. The only blade available at present is a combination blade. Can you tell me which type of blade is most suitable for making the miter cuts?

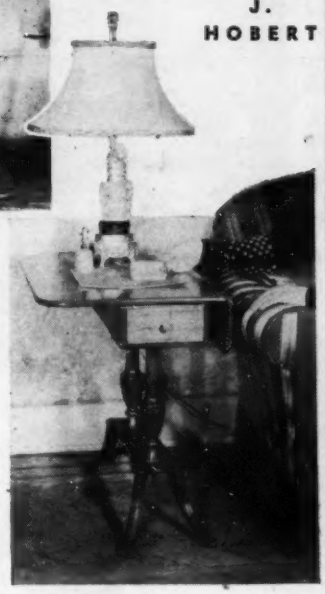
John J. Conway
Keyport, N.J.

A. A blade designed solely for cross-cutting will give better results than the one you are now using but for extreme smoothness of the cut I would suggest equipping your saw with a hollow-ground blade. Since these blades are tapered from the edge to the center for the necessary clearance the teeth do not require setting; this accounts for their smooth cutting qualities. When using this type of blade it is important that it be kept sharp at all times.

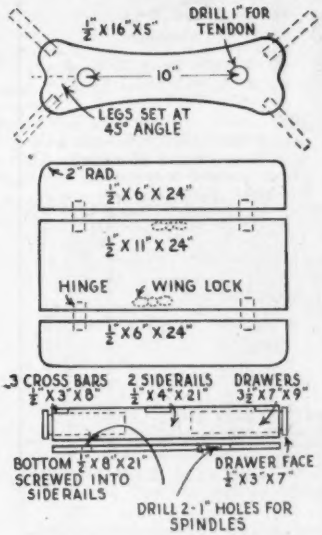
DUNCAN PHYFE DROP LEAF END TABLE

By EDWARD J. HOBERT

In last step assemble drawer bottom to rails.



Can be used as end or serving table.



THIS Duncan Phyfe drop leaf end table is relatively easy to make. Compact, it can be used as an end table or coffee table. It has two drawers for storage, closes to 11" x 24", and opens up to 24" x 24". The spread of the four legs provides adequate stability without the appearance of bulk.

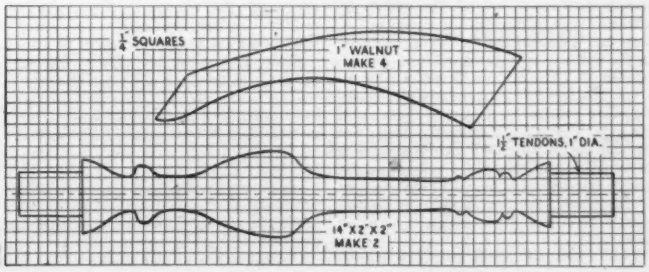
The entire table is made of ½" walnut, except the 1" stock in the legs and the 2 x 2 posts used for the lathe turning. Follow the drawing and cut all material to size; turn out the two posts according to the template.

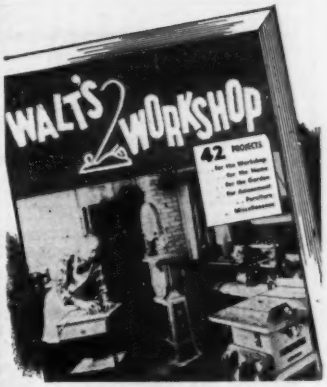
Use either a shaper or a file on the edges to give it the appearance of slenderness. Example: the legs were shaped with two veins and rounded edges, whereas the ½" stock has only one vein and rounded edges.

Fasten the four legs to the bottom plate so they toe out 45° from the center line. Drill the holes for the posts and fasten them to the bottom plate and the drawer bottom. I used screws throughout and filled the holes with walnut plugs which I sanded smooth.

Next, the top was assembled, hinged and wing locked. After that the cross bars were assembled, first to the side rails and then to the top. The last step is to assemble the drawer bottom to the side rails.

Fit the two drawers and finish the table with whatever method you prefer. Personally, I finished most of these pieces as I went along, since they are easier to handle this way.





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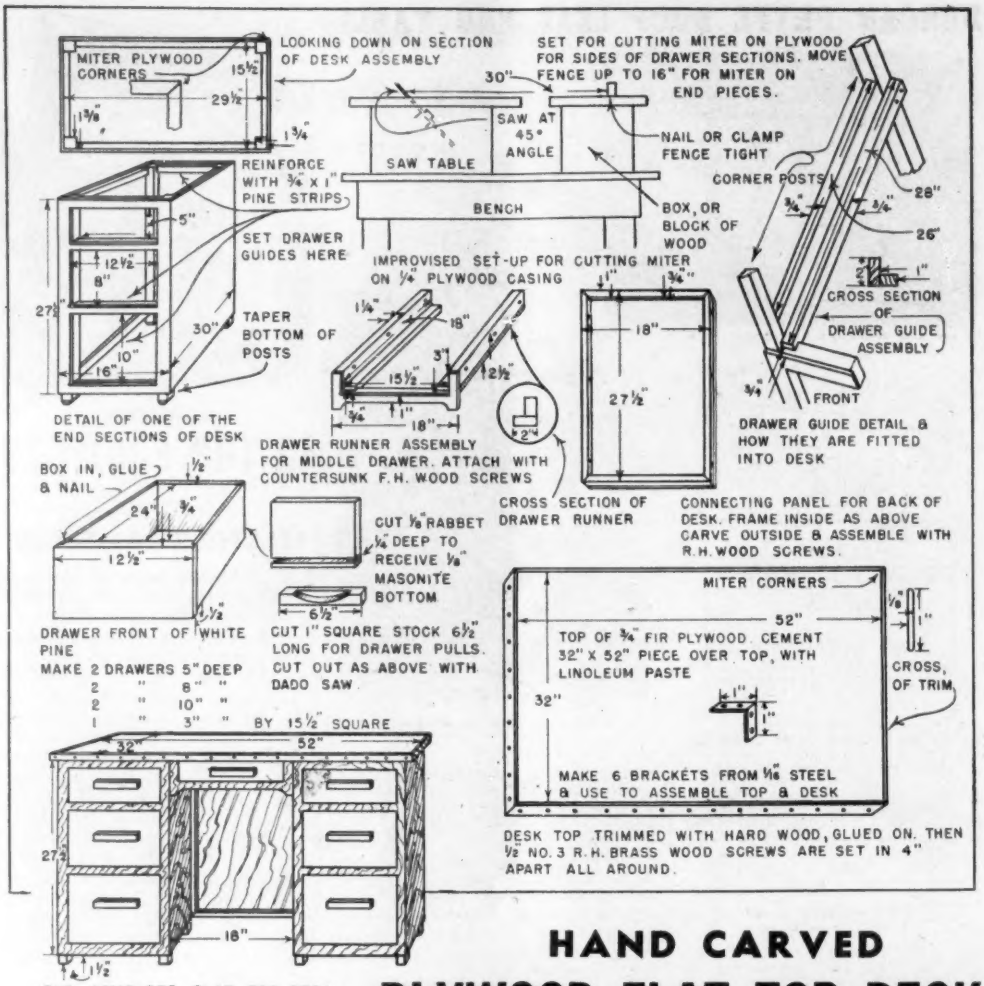


THE COMPLETE FLAT TOP DESK

HAND CARVED PLYWOOD FLAT TOP DESK

BY DICK HUTCHINSON
Associate editor

THE OUTSIDE of this desk is all ¼" fir plywood. The soft white grain is carved out over the entire exposed surface (with the exception of the top and the front of the drawers). The corners are mitered to give the finished piece a Modern appearance. It is finished in a rubbed brown.

The eight corner posts are cut first to exact measurements. Cut the ¼" fir plywood next. Four pieces 27½" x 30", four pieces 16" x 27½", one piece 18" x 27½", and the piece for the front of the center drawer.

To miter the corners for the front, back and side pieces for the two drawer sections set your tilt arbor saw for a 45° cut. If the saw table is not wide enough to allow the use of the fence for a guide, build up a guide block from boxes or blocks of wood (see drawing) and make the 45° cuts on the eight pieces that are to be mitered.

Using a wood carver's curved gouge chisel, carve out the soft white grain over the entire outside surface of each piece. One of the photographs shows how to hold the chisel for this operation. This will require quite a bit of time but the results are well worth the effort. A similar finish, although not as attractive, may be accomplished by sand blasting, or by the use of a power-driven scratch brush.

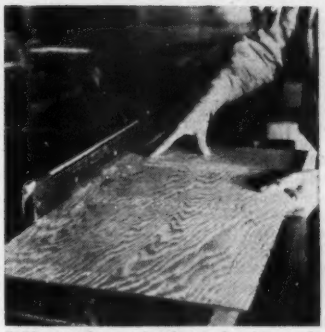
On the front for the two drawer sections lay out for the drawers, then carve out only that part outside the lines. Set up the bench saw and, using the fence as a guide, let the piece down on the saw to cut all but about 1" in each corner of the drawer opening. Finish the cutting with a hand saw (this insures a straight, even cut).

Coat contact surfaces for each corner including the miter cuts with resinous glue. Fit and brad tight with 1¼" No. 16 brads. Drive the brads in through a spot on the plywood where carving has been done. As the drawer sections are assembled square up with a carpenter's square; let set to dry for about 24 hours.

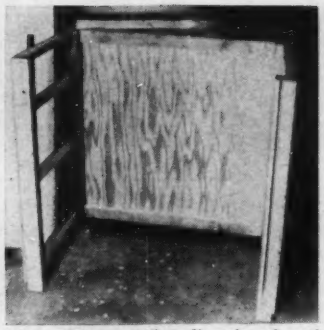
After the pieces are thoroughly dry, set the nail heads in and fill holes evenly with Plastic Wood. Then cut the reinforcement strips; glue and brad them in with ¾" No. 16 brads. Set the brads in and fill holes with Plastic Wood as before.

Make, glue and nail the drawer guides as shown in one of the drawings. Be sure these are all level and even, so that the drawers will slide evenly.

Cut the fronts of the drawers from ¾"



Cutting openings on bench saw for drawers in one of the front panels.

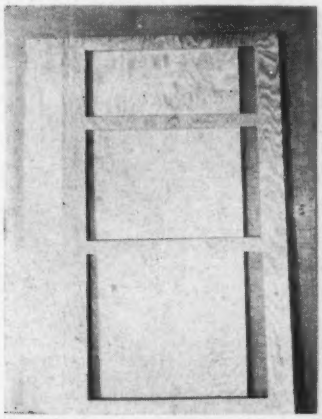


Interior of drawer section. Shows how plywood is reinforced on inside.

white pine, sand smooth. The box for the drawers is of ½" white pine. Make the rabbet cuts with the dado saw. Assemble with glue and brads, sliding in the Masonite bottom as the piece is assembled.

Frame the back panel as shown and set between the two drawer sections (at the back); secure with R.H. wood screws.

Build the center drawer runner (using



Shows the three drawer openings cut in one of the front panels.

the ¼" plywood for the front) as illustrated. This is attached between the two drawer sections at the front, and is secured with countersunk F.H. screws.

The desk is assembled in this way so that by removing the desk top and the front and rear connections from between the drawer sections, the desk may be taken apart for moving through narrow doors, etc.

The drawer pulls are cut from white pine; the finger recess is made on the dado saw. These are given a rubbed brown finish, after which the front surface is sanded. A ⅛" veneer of balsa wood is applied with glue. Two holes are drilled through the front of each drawer, and the pulls are assembled with R.H. wood screws, driven in from inside the drawer.

A piece of ¾" plywood is cut 32" x 52" for the desk top, and a piece of ⅛" Masonite is cut to exactly the same size. Give the top side of the ¾" plywood a generous coating of linoleum paste. Lay the Masonite over this, and square up; then clamp tightly all around and let set until dry, or about 24 hours.

Any hardwood will provide material for trimming the edge of the desk top.

The desk completed and set up. Its sturdiness makes it truly practical.

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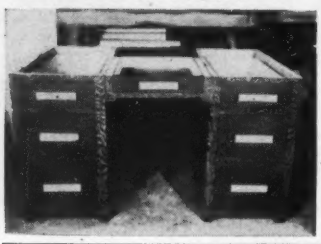
Birch was used on the desk shown. Cut four strips ⅛" thick x 1" wide. Round the

Front drawer guide and back center panel hold drawer sections together.



How to hold carver's curved gouge chisel in carving out soft white wood.

corners slightly and sand smooth.

Cut to length for the four sides and miter the corners; then drill holes about 4" apart for the full length of each piece. Cover the edge of the desk top with a generous coating of resinous glue. Press the binder strips in place and drive in ½" No. 3 R.H. brass wood screws all around.

All exposed parts of the desk that have been carved out are given a coat of dark brown semi-gloss oil paint. The paint is immediately wiped off, and the surface rubbed with a soft cloth until it appears dry. This will remove most of the paint from the highlights, and will leave the dark brown in the portions that have been carved out.

For the drawer fronts and the trim around the top, give these the same treatment—except that the surface should be gone over gently with a soft cloth, removing just enough of the surplus paint to still leave it brown.

Let the desk dry thoroughly, then make the metal brackets and attach the top to the drawer sections with the 6 steel brackets—from the under side of the top. You will have completed one of the most interesting projects you ever tried, and you will have a desk to be proud of.

One of the drawer sections completed. Note carving on outside.

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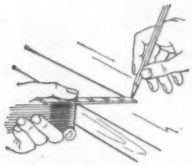

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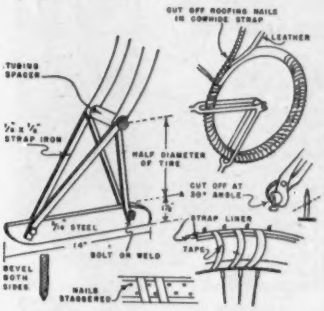
Install a runner on the front fork and a spiked strap on the rear wheel and you have a speedy bike for the frozen pond. The runner should be of steel, ground both sides on the bottom as illustrated and mounted on the fork with strap-iron legs. A tubing spacer goes over the axle and the legs are bolted on the outside.



Turn the wheel upside down for installing the strap. Cut off roofing nails at an angle so that only about 3/16" protrudes from the outer strap. A leather liner should be laid under the spiked strap, and both bound snugly to the wheel as illustrated. Nails should be staggered. As you can see, this arrangement requires no alteration of the bicycle, and it can be returned to its normal condition in a few minutes.

Tin Can Milk Bottle Carrier

By Frank E. Palmer

This carrier is convenient to carry or to set in one's car. As shown in the photo, it is very simple to make. Cans are fastened to the bottom board by screws. Short screw bolts hold the cans securely together at the top, and the handles attach to the side of tops of tall juice cans. For someone more aesthetic, a little paint might conceal the origin of the cans and improve the looks.

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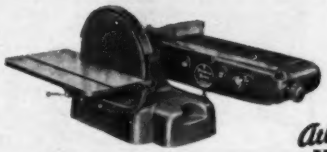

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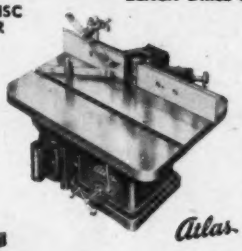

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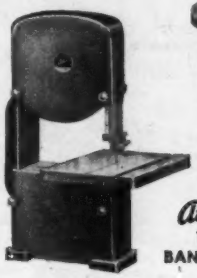

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ANNUAL REVIEW OF HOW-TO BOOKS FOR THE

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(ORDER FORM

BOOKBINDING

(501) **LET'S BIND A BOOK**—Pratt: Begins at the beginning and presents each bookbinding process. History of the craft. Descriptions of the tools and materials needed. (Bruce) $2.50

(502) **GENERAL BOOKBINDING**—Groneman: Elementary instruction in hand bookbinding. Easy-to-understand directions and many illustrations. (McKnight & McKnight) $1.20

CERAMICS

(503) **CERAMICS FOR ALL**—Stewart: Tells the what and how of ceramics. Many photos and drawings point up the directions and add greatly to the usefulness and interest of the book. (Barnes & Noble) $2.00

(504) **COMPLETE BOOK OF POTTERY MAKING**—Kenny: Designed to carry the beginner from fundamentals thru directions for simple processes and projects, to technical skill and the creation of true works of art. (Greenberg) $7.50

(505) **HOW TO MAKE POTTERY & OTHER CERAMIC WARE**—Turoff: A practical book of instruction showing how to design, make, decorate and handle articles of clay. Every phase of ceramics. Directions for building an inexpensive electric kiln. (Crown) $2.75

(506) **PRACTICAL POTTERY**—Jenkins: A reliable guide to every phase of pottery, from the selection of proper equipment and materials to a quick grasp of basic processes. Many helpful hints and ideas. (Bruce) $2.75

(507) **PRACTICAL CERAMICS**—Bell: Ten simplified illustrated lessons to enable you to produce your own dinnerware, decorative pieces, novelties, gifts. Non-technical language. (Pitman) $1.50

ELECTRICITY

(690) **PRINCIPLES OF ELECTRICITY**—Cornetet: A 341-page textbook concerning fundamental electrical phenomena, suitable for basic courses in schools and colleges. Practical applications of electricity; many laboratory experiments. McKnight & McKnight) $4.00

(680) **GENERAL SHOP ELECTRICITY**—Draggo and Porter: Adapted for use in unit shops in electricity and in general shop courses, as well as for individual use. Explains wiring circuits, currents, magnetism, radio, materials, equipment, etc. Numerous actual projects discussed. (McKnight & McKnight) $1.25

(508) **PROJECTS IN ELECTRICITY**—Collings: 21 projects, inexpensive to make, demonstrate basic electrical principles. Photo of each project shows how it will look upon completion. (McKnight & McKnight) $1.20

(509) **HOME ELECTRICAL REPAIRS**—Morgan: Instructions on how to fix all but the most complicated electrical equipment disorders in the home. (Crown) $3.00

(510) **ELECTRICAL PROJECTS FOR THE SCHOOL & WORKSHOP**—Ford: Photos, drawings, directions on the building of 34 electrical projects. Step-by-step procedure is followed. (Bruce) $3.00

(511) **PRACTICAL ELECTRICAL WIRING**—Richter: Methods of electrical wiring explained simply. How to do all kinds of light and power wiring jobs. (McGraw-Hill) $3.75

(512) **FRACTIONAL HORSEPOWER ELECTRIC MOTORS** (2nd Edition)—Veinott: How to install, maintain, repair, design, manufacture, inspect and sell fractional horsepower motors according to standards set by ASA, ME, NEMA, AIEE. (McGraw-Hill) $5.00

FOR THE GARDEN

(513) **GARDEN FURNITURE**—Chairs, tables, benches; chaise longues; couches; outdoor desk; shelters; bower bowls; wind mill for atop your garage; wheel barrows; fireplaces; swings; outdoor lamps; garden swimming pool; terraces; sun dials; wishing well; hose reel; garden umbrella. (Hobby Books) $1.00

(514) **BARBECUE BOOK**—Sunset: Hundreds of ideas for building and using barbecues and grills. Drawings for 25 basic types you can build. Also savory recipes for barbecue cooking (Lane) $1.50

(515) **FENCES, GATES, TRELLISES**—Arbors and trellises, gates and fences, garden shelters, terraces, pools, rock gardens, walks, lawn and garden novelties, pedestals, barbecues, greenhouses, garden lights. (Hobby Books) $1.00

(516) **BIRD HOUSES, FEEDERS, BATHS**—28 designs: log cabins; tepees; colonial; African, marine; cafeteria; martin, streamline, etc. Will attract 27 kinds of birds. Made from lath, logs, scrap lumber, celluloid, concrete, metal. (Hobby Books) $1.00

(517) **IDEAS FOR BUILDING PLANT SHELTERS AND GARDEN WORK CENTERS**—307 photos, drawings and plans showing what the handyman can do in a garden with simple home tools. Ideas for nearly every kind of lathhouse and greenhouse. (Lane) $1.00

(518) **SUN DIALS**—Mayall & Mayall: With this book, some ordinary drawing materials and a few tools, anyone can design and make the exact sundial that best suits his own needs. (Branford) $3.50

(620) **THE PORTABLE GARDEN**—How to grow plants and shrubs in pots, boxes, tubs, other containers. Special culture charts. Profusely illustrated. (Lane) $1.00

FURNITURE

(680) **FURNITURE DECORATION MADE EASY**—Hallett: Studio-tested work manual with detailed instructions and practical, full-scale patterns for the home craftsman interested in beautifying old or new furniture. Skills of stencilling and gold leaf decoration presented clearly. Scores of patterns for traditional furniture and one-of-a-kind pieces. Charles T. Branford $4.95

(692) **HOW TO BUILD MODERN FURNITURE**—dal Fabbro: Vol. 1 concerns practical construction methods, all step-by-step phases. Discusses joinery, wood structures, upholstery, other basic subjects. Vol. 2 concerns designs and assembly. Many photos of completed pieces in model arrangements. Explains use of furniture-making tools, recommends equipment needed. (F. W. Dodge) Both volumes $9.50

(519) **MODERN FURNITURE MAKING AND DESIGN**—Hooper: Design and construction of furniture for the living room, dining room, bedroom, garden. Traditional as well as variations. Ideas rather than working drawings. (Bennett) $5.50

(520) **ANTIQUE REPRODUCTIONS FOR THE HOME CRAFTSMAN**—Yates: Devoted to the making of fine reproductions of early American antiques in pine, maple and cherry. How to reproduce coveted pieces. (Whittlesey House) $4.00

(521) **BOOK CASES**—Book cases and shelves, magazine and book racks, book ends. Walnut, mahogany, birch, other woods. (Hobby Books) $1.00

(522) **FURNITURE FOR THE AMATEUR CRAFTSMAN**—Harmes: A new approach to furniture construction by amateurs. For the craftsman who would like to accomplish something unusual. (Bruce) $3.00

(523) **DINING ROOM FURNITURE**—Hepplewhite, 17th century, Spanish, Duncan Phyfe, Modern—5 complete dining room suites and 15 assorted items. Chairs, tables, buffets, sideboards, modern dinettes, sunporch furniture, Welsh cupboard, lowboys, breakfast cabinet. (Hobby Books) $1.00

(524) **REVIVE YOUR OLD FURNITURE**—Sloane: This book will inspire new ideas of how to dress up your shabbiest furniture, redesign those old pieces you have stored away in the attic. (American Studio) $2.00

(525) **9 CORNER CABINETS**—Hepplewhite, Norwegian, Welsh, Modern. Two handy cocktail bars and serving wagons, 8 serving trays, carts and tea wagons. 9 sewing cabinets. (Hobby Books) $1.00

(526) **FURNITURE REPAIR & REFINISHING**—Kinney: A work manual on every aspect of furniture repair and refinishing. Accurate, step-by-step directions for every single kind of job you might want to tackle. (Scribners) $3.50

(527) **LIVING ROOM FURNITURE**—15 outstanding chairs. Tables include gate-leg, butterfly, foldaway, end, coffee, occasional, etc. (Hobby Books) $1.00

(528) **MODERN FURNITURE & FITTINGS**—Hooper: A practical treatise on the design and construction of furniture for private houses and public buildings. 1700 working drawings over 100 photos. (Batsford) $10.00

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ON PAGE 159)

(529) **24 DESKS**—Governor Winthrop secretary, spinet, knechole, mariner's, corner model, sectional, flat-top formal, junior size, portable, telephone. Supplementary section features wastebaskets, book ends, tables. (Hobby Books) $1.00

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(558) **FUNDAMENTALS OF CARPENTRY**—Durbahn: Volume I covers selection of tools, choice of woods and materials, use of steel square, reading blueprints, $3.25. Volume II gives instruction on every phase of constructing a building from excavating to finishing. (American Technical Society) $4.25

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(630) **COLORING, FINISHING & PAINTING WOOD**—Newell: Varnishes, stains, paints, abrasives, other wood and metal finishing materials. Also blond and bleached wood finishes, bleaching agents. (Bennett) $6.00

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(633) **FURNITURE FINISHING, DECORATION & PATCHING**—Patton & Vaughn: Practical instruction on materials and processes. Tells about the new types of stain, filler and synthetics, the new appliances and methods. (Drake) $4.00

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(635) **GENERAL PLASTICS**—Cherry: How to work all types of plastics with hand tools, power tools and how to do internal carving and dyeing. (McKnight & McKnight) $1.75

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SUGGESTS RIDING HOBBY HORSE WELL

By STEVE ELLINGSON

Nothing in the world is quite so fascinating as the subject of human nature. Each person is different, each one is interesting, and when we really get acquainted each one is lovable.

The other day I watched an elderly retired business man put a finish on an end table he had built for his newly married daughter. As he ran his hand over the smooth, silky surface he fairly radiated the satisfaction and pride of accomplishment that he felt inside.

Right then I decided that one of the deepest drives of human nature is the longing to do a thing well. I'm convinced that much of the sickness, dissatisfaction and unhappiness of human beings is due to the fact that they have not learned to do any one thing exceedingly well.

So often people's attitudes toward their work or even their hobby are shoddy and indifferent. Everything is done in a makeshift way with the least effort. People like this never have that exhilarating thrill of looking at something they have done and done well. We all need to do some little thing as good as the best, or better than anyone else.

Since we all want to be happy and get the most out of life, it pays to cultivate the art of efficiency and get rid of our shabby habits. Naturally we need something to practice on, and what could be better than a pair of clever bookends?

These bookends were designed for youngsters, but it turned out that oldsters like them even better. Any amateur can make these, and in no time at all he can turn out a first class job. The full size pattern gives all the directions in a way anyone can understand. All that's needed are a few small scraps of wood. You trace the pattern on the wood, then saw it out, and finally put it together. Painting is easy because you simply trace the features on the wood, then paint over the tracings.

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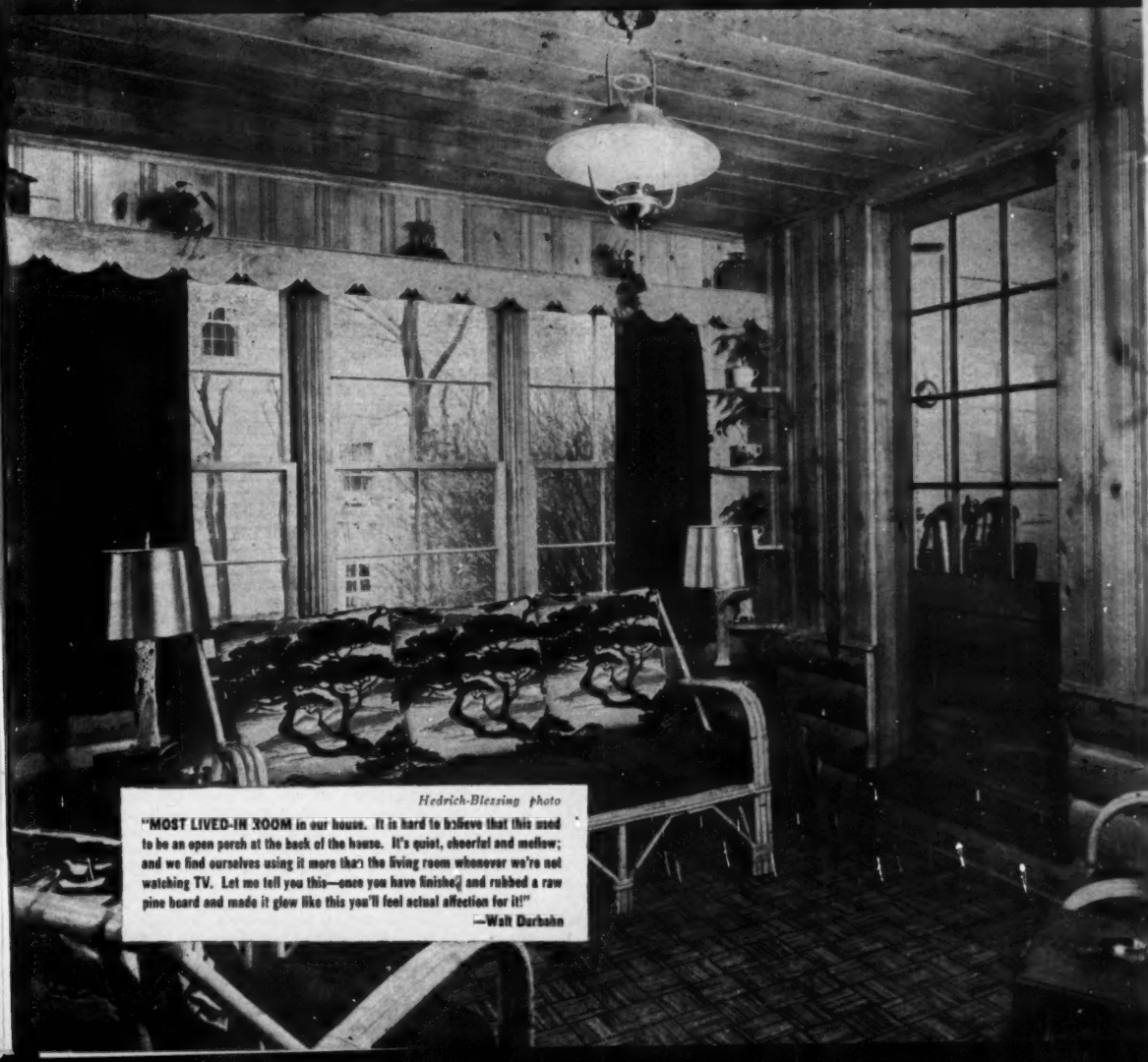


Hedrich-Blessing photo

"MOST LIVED-IN ROOM in our house. It is hard to believe that this used to be an open porch at the back of the house. It's quiet, cheerful and mellow; and we find ourselves using it more than the living room whenever we're not watching TV. Let me tell you this—once you have finished and rubbed a raw pine board and made it glow like this you'll feel actual affection for it!"

—Walt Durbahn

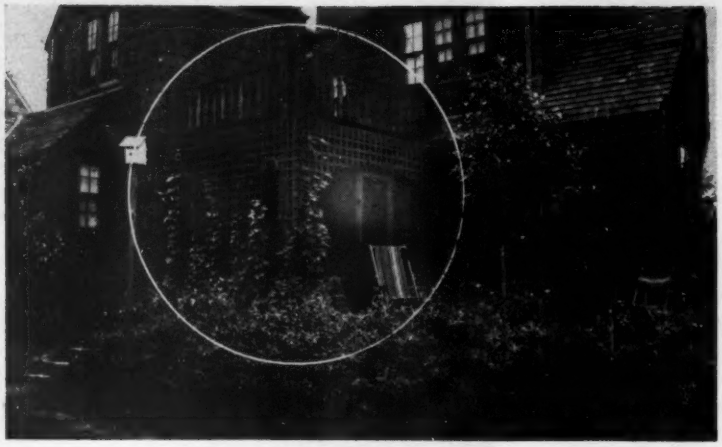


Photo 1: Twenty years ago we thought this was quite a porch—except when it rained and snowed. And then was it ever a nuisance! Actually, it was "neither fish nor fowl." But there's no law which said we had to leave it this way.

NEED ANOTHER ROOM? GOT AN OPEN PORCH? THAT DOES IT!

BY WALT DURBAHN

IT'S wonderful to have an open, screened-in porch where one can relax on a summer evening. But it's not so pleasant to awake at three o'clock in the morning to hear the rumble of an approaching storm—and then get out of bed and move porch furniture and throw the rug back! Then after the rain there is the clean-up job and putting things back in place.

I don't mean *I* did those things, you understand. Come the millenium at 3 A.M., and I doubt that I could work up enough interest to stir my stumps. But Ruth's different. She's ambitious that way (fortunately for our porch furniture). However, after 19 years of it even Ruth ran out of gas and made me agree to close in the porch.

Well, I must admit, now that it's all done, the porch is more pleasant than ever before. We enjoy it winter *and* summer.

Open porches like ours usually are finished to withstand exterior weather conditions. The walls were shingled, and it had a concrete floor and a beaded ceiling. All of this had to be removed or covered. Photo 1 shows the open porch in 1932, shortly after the house was completed.

We started by removing the shingles from the side walls under the porch. The 6 x 6 posts showed signs of decay at the bottom after 19 years, so we trimmed them back and set them on 2 x 4 mud sills which also laid along the edge of the concrete floor. Several concrete anchors held them in place. The outside walls were framed with 2 x 4s, leaving openings for the windows and the door, and sheathed with 1 x 8 shiplap. Metal flashing (Fig. 1) bedded in mastic was formed to fit over the concrete edge and up the stud frame before the sheathing was applied. This is most important, to prevent moisture and weather from seeping in.

Once the walls were sheathed we could set the window and door frames and apply the shingles. We were very careful to remove the shingles so that they might be reused on the outside walls, as you can see in Photo 2. Only trouble was, they were not weathered as much as the other shingles so had to stain them to match. The last course of shingles at the top were flashed with metal to keep out moisture and weather. Now we were ready to put the sash in place—and the porch was closed in. Then we could go on working inside regardless of the weather.

Floor treatment important

The floor was the first operation inside. The concrete floor, like all open porch floors, was pitched to drain the water. Since it never would do to have a sloping floor in a room, we had to level it. We could have done this with another layer of concrete; but concrete floors unless they have radiant heat pipes in them, are too cold to be comfortable. Therefore, we decided to level the floor with 2 x 4 sleepers placed on edge (Fig. 2). At the highest point they had to be dressed down and on the lower points they were shimmed up with shingles and blocks of wood. It's important to fasten the shims to the sleepers with nails so that they will not work out and cause a bouncy floor.

Rock Wool bats 4" thick, with the vapor barrier up, were placed between the sleepers and a 2¼" face oak floor was laid over the sleepers. No sub floor was used. Ample electric outlets on walls and ceiling were provided.

The decision on wall and ceiling covering, next in order, was not a difficult one to make. The basement recreation room, which we finished a couple years before, is Ruth's pride and joy, and she wanted more of that beautiful Ponderosa knotty pine. Log siding was used horizontally as a wainscot up to the window sill height, vertical pine paneling with molded edge the rest of the way to the ceiling, while the ceiling has pine boards 8" wide with "V" edges (Photo 3).

Walls and ceilings were carefully insulated with 4" Rock Wool, vapor barrier toward the inside, before nailing the paneling in place. All boards were sanded carefully with 2/0 and 6/0 sandpaper to create a smooth and hard surface so necessary for a good clear finish. The stud walls were ready to receive the horizontal paneling but they required cross furring, either over or between the studs for the vertical paneling (Fig. 3).

The top and bottom boards of the log

Photo 3: Lots of windows—and doors too: one to the living room, one to the kitchen, and the third to the garden. The generous use of windows brings our shrubbery and flowers indoors. Is this ever a spot to "get away from it all" and catch a luxurious 40 winks!

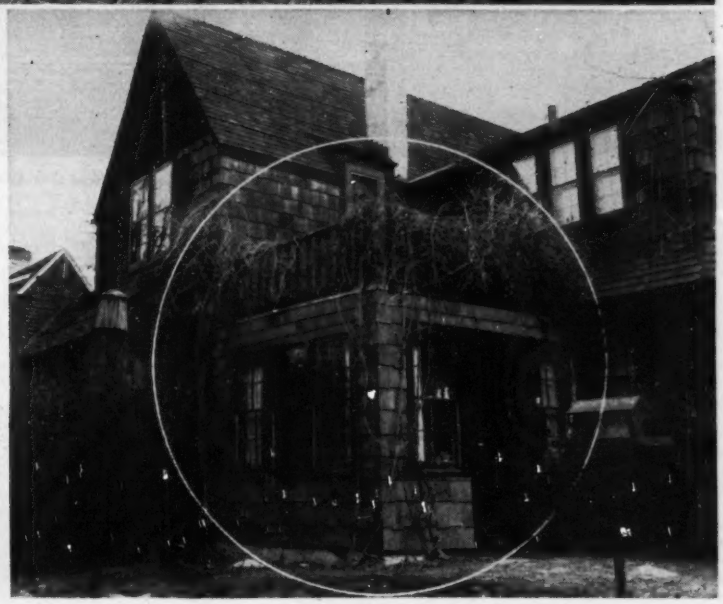
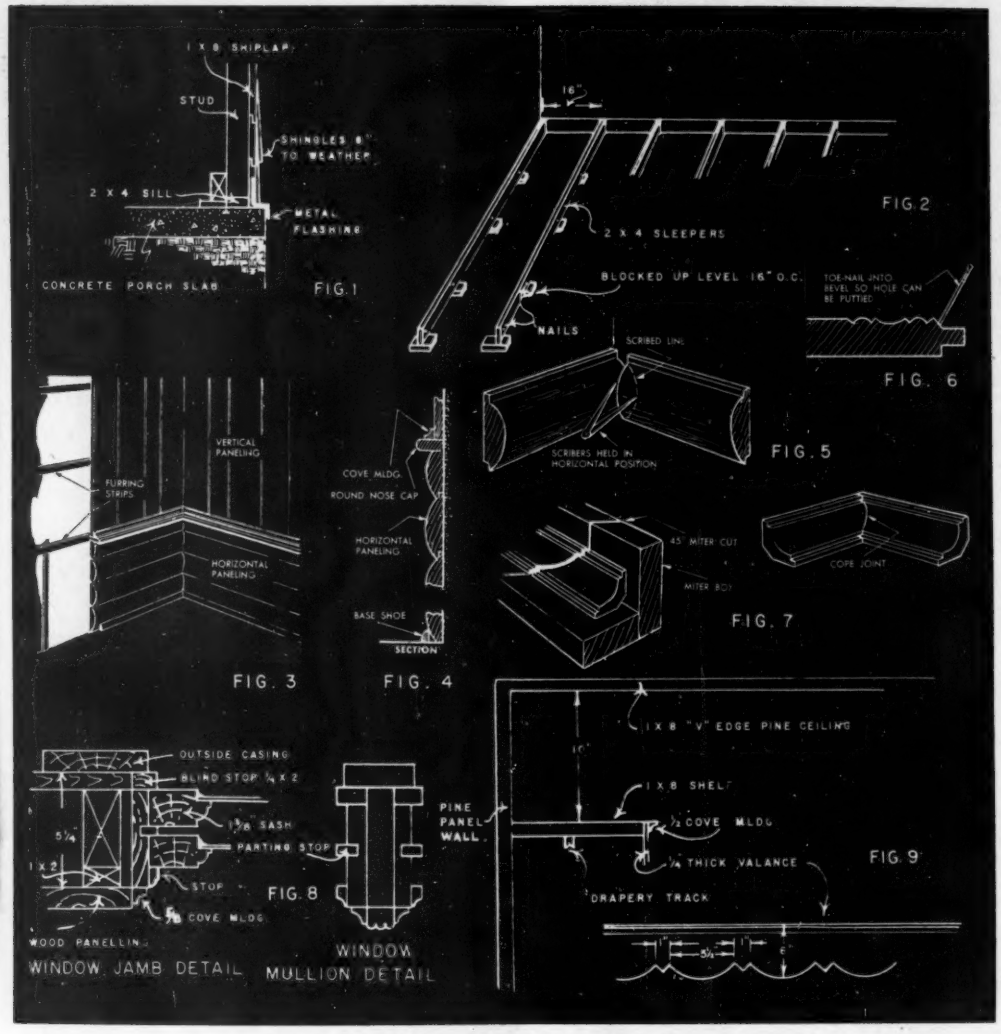


Photo 2: Looks like the architect designed it this way from the beginning, doesn't it? The hanging vines help to create the effect that this room always was here. Incidentally, the bird feeders are perfectly located; we get untold pleasure watching them now.



Figs. 1-9, basic installation details in simplified form, as referred to in the text

paneling were narrowed to come out right at the window sill, leaving a 1" flat surface. This flat surface provided a ledge on which the round nose cap could be fastened (Fig. 4). The vertical paneling rested on the cap and a small cove molding rounded out the corner. The log paneling was coped at the corners—that is, cut and shaped at the end of the board to fit against the board on the adjacent wall (Fig. 5). The shape of this cut can be obtained by scribing with a pair of dividers (Fig. 5) or mitered to obtain the profile outline and then cut out with a coping saw.

Pine paneling with a molded edge is toe nailed (Fig. 6). Note that the nails should be placed into the bevel high enough so the holes can be puttied. An inch and half cove molding was placed at the ceiling line, and the corners also coped (Fig. 7).

Our treatment around the windows and door was somewhat unusual, since no casings were used. The back of the vertical paneling was brought out flush with the edge of the jamb and a ¾" cove molding fitted into the corner (Fig. 8). The window mullion has a ¾" beaded piece and a cove molding in the corner.

Final touches also important

The valance over the window and door on the two sides of the room not only cover the drapery heading and track but also provide an 8" shelf for those accumulating antiques, curios, awards and what-have-you. This 1 x 8 shelf is supported in the corner with a wooden bracket and is nailed along the wall as well as at the ends.

A ¼" plywood valance with scalloped edge is nailed to the edge of the shelf and a ½" cove molding added along the top edge (Fig. 9). This cove gives it a sort of crowning effect. Note the treatment of the valance above the door (Photo 3), a necessity to allow the door to swing open. It also helps to break the monotony of a long valance.

The walls and ceiling were given the same treatment as in the recreation room —one coat of Ipswich Minwax diluted half with benzine and wiped off right away, then a coat of shellac thinned 50% with denatured alcohol, and a final coat of flat varnish. This gives pine an aged effect which will deepen over the years from the action of light.

Simplify Home Repair With New Copper Sheeting

By RAYMOND SCHUESSLER

Home repairs are expensive, what with labor and material costs so sky high. The home owner who is handy with tools is fortunate.

SHEET copper is the best all-around home repair metal. It is ductile, strong, and it never rusts.

For example, future trouble and expense can be saved by capping the floor timbers of an open porch with copper. Rain means rot and rot means high replacement costs. U-shaped caps atop the porch timbers, secured with roofing cement and flooring nails, means a water-protected underpinning for the porch.

Some porches are supported by brick columns. Rain, running through the floorboards, eventually weakens the mortar between the bricks. It crumbles and the top courses of brick become loose. Results: An insecure pier. Capping the pier with sheet copper when repointing it is an easy precaution to take. It simply involves cutting a piece 2" wider than the top of the pier, jacking up the timber and slipping the sheet into place. The overlapping sides are bent down around the top of the pier.

Rain sometimes weakens and causes the mortar between the top courses of brick on a chimney to crumble. A copper cap for the chimney top is a good investment here. It is easy to solder the two short pieces to the two long pieces and thus form a cap. This is secured with roofing cement.

Holes in the outside trim of a house often are inviting to squirrels, birds, woodchucks. By cutting a piece of copper to overlap the hole by 4" on all sides, if possible, and applying a coat of roofing cement to secure it, you place a permanent patch on the hole. If you want to paint the copper to match the rest of the trim, just wash the patch in vinegar to remove any traces of oil or grease. Copper patches are especially good for a hole covering a molding since it is bent so easily to simulate the contours of the molding itself.

Outside cellar doors sometimes let rain in, either at the juncture of the bulkhead and wall, or at the door line. If possible the copper flashing should be inserted when the wall shingles are installed, but you may be able to loosen them enough to get it up underneath. Instead of the curved wooden strip to carry off water, the ¾" section of the copper sheet could be made about 3" wide and bent up at an angle along the lower edge.

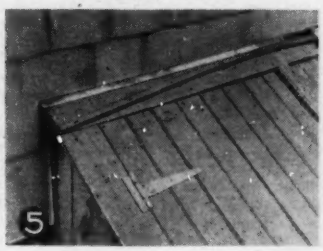
The tops of garage doors take a beating from the weather. Since at least part of the tops are end grain, they don't take paint very well and are prone to rot. A tight-fitting cap of copper will protect them.

Posts will last longer if the tops are protected from the weather. To make a post cap, measure the diameter of the top and scribe a circle ¼" larger on a piece of copper. Using the same center, draw a second circle 2" larger than the first circle. With tin snips, cut slits in from the circumference of the outer circle to the circumference of the inner circle. Place the cuts about 1" apart. Put the cap atop the post and bend down the tabs. Drive a bronze nail into every third or fourth tab, and you have a watertight cover that will prevent rain from soaking in.

Sheet copper, if it goes well with the color scheme of your kitchen, makes nice drain board covers and splash boards. Decorative effects include hammering, chemically darkening, and patterning with steel wool. Another use is as a drip pan for an oil heater. Turn up the sides of the pan about ½" and solder the joints.

Copper lamp shades can be made from the flashing material. Caps for the tops of doors that open out. Copper rain guards over doorways to stop dripping water where there is no gutter. Copper doily to set flower pots on.

In the home workshop where boxes or tool chests are kept under a bench and are slid in and out frequently, fasten copper to the floor with linoleum cement to keep floor from wearing, and likewise to keep the chest from chafing.



1—Copper has long been an ideal material for making gifts. In this new package form, the lightweight copper becomes more attractive to the handicrafter.

2—A 2 x 4, a pair of tinner's snips and a hammer are all that are needed to go to work on this light weight copper.

3—The material is a natural for capping chimneys and thus preventing the top bricks from working loose as rain weakens the mortar.

4—Capping a clothes post protects the top from rain. It is an easy job with this lightweight copper.

5—Cellar hatchways can be secured against rain or snow by flashing them up with this easily formed material.

6—Porch timbers are protected when copper is laid as a door sill.

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FIX IT YOURSELF

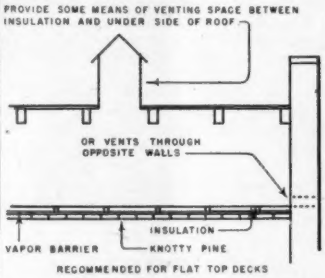
By Percy S. Graffam
Associate editor

...For... FUN PROFIT ECONOMY

You are invited to send your inquiries on home repair problems—interior and exterior, as well as on items used in the home. They may concern construction, heating, wiring, plumbing, painting, etc., and may involve wood, metal, leather, plastic, glass or any other material. All inquiries will be answered as promptly as possible, either in this column or by personal letter. Be sure to enclose addressed stamped envelope when writing to Mr. Graffam.

Q. My problem is severe sweating of knotty pine ceiling in my flat roof block wall house. What steps should be taken to stop this condensation?

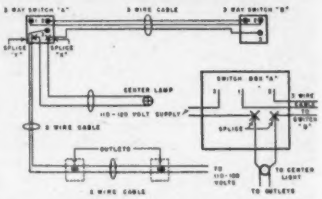
A. Sweating of this ceiling is caused by lack of ventilation in the space between the ceiling and the roof. The fact that you have four inches of insulation is not enough to correct this trouble unless some method is used to allow this dead air space to breathe. The better way to have built this ceiling would have been to have placed a vapor barrier (aluminum foil) on the warm side of the ceiling and then added the four inches of insulation with air ventilation, before you added the knotty pine. The remedy at this time would be to provide vents in the roof or side walls. See sketch.



RECOMMENDED FOR FLAT TOP DECKS

Q. I am having difficulty wiring a light and outlets to a 3-way switch arrangement. Can you tell me how to do this, using as small an amount of three-wire cable as possible?

A. The only three-wire cable needed is the piece between the two 3-way switches. Run the two-wire lead cable from the 110-120 volt supply to the first and second outlets. Continue on to the first 3-way switch box "A". Run a two-wire cable from switch "A" to the center light. Run a three-wire cable between the two three-way switches. Connect wires 1-2-3 as shown at switch "B". Connect wire 1-2 at switch "A". Terminal 1 connects to terminal 1 and terminal 2 to terminal 2. At switch "A" splice one of the wires from the center light to lead 3 from switch box "B". Splice "X". Splice the other lead from the light to one of the leads from the 110-120 volt supply. Splice "Y". Connect other lead from 110 to 120 volt supply to terminal 3 at switch "A". You can now turn center light off or on from either switch "A" or "B". The floor outlets are on all the time. If you wish floor outlets to be controlled by switches "A" and "B" the 110-120 volt



supply will have to be run directly to switch box "A". See sketch for connections.

Q. I have a cement basement floor on which the cement keeps flaking or coming off in fine dust. How can I seal this floor so that it can be painted or how can I prepare it for laying asphalt floor tile?

A. The trouble with your cement floor is due to improper finishing and curing. As you plan to install asphalt tile you can prepare your floor by first sweeping it thoroughly to remove loose dirt and then scrub with soap suds and rub down with a scrubbing machine fitted with a wire brush or with a pad of fine steel wool. The abrasive action of the wire brush or steel wool removes the film of consolidated dirt and exposes the true wearing surface. The floor should then be mopped to remove the loose dirt and a final scrubbing should be given with soap suds and the fiber brush. This finish will not dust because all adhesive dirt has been removed. If your floor is not of the proper construction, the above treatment may not be sufficient to prevent dusting and it will be advisable to apply some material to assist in hardening and binding the surface.

There is no sure cure-all for poor materials or careless workmanship. The following material properly applied may improve the wearing surface of a poorly built floor. Magnesium fluosilicate, zinc fluosilicate, sodium silicate, aluminum sulphate are some of the substances used for this purpose. If the floor seems to be in good shape after the scrubbing and has thoroughly dried, you can install the asphalt tile. Follow the instructions recommended by the manufacturer. Armstrong Cork Co. of Lancaster, Pa., have a special booklet titled, "How to Install Armstrong's Asphalt Tile," which they will send you upon request.

Q. In framing around a window are double studs required?

A. Yes. Window openings are double framed sides, top and bottom (see sketch). Nailing is important. The studs above the lintel are toe nailed to each

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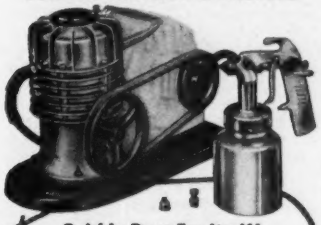

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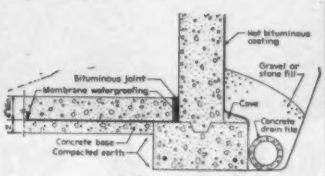
part of the lintel with one 10d nail. The long studs are nailed with two 10d nails to each part of lintel. The double studs are nailed together and toe nailed to the sole plate with one nail on each side. The lower member of the sill is nailed from the top to each stud below it with two 10d nails. The upper part of the sill is nailed to the lower member with 10d nails spaced 7 to 8 inches apart and finally the double studs are nailed to the double sill with two 10d nails in each sill. For wide openings the top lintel must either be trussed or double 2 x 6's or 2 x 8's used as shown in the photo.

Q. How can I put in a basement floor that will be waterproof?



Poorly drained soil

A. A cement basement floor should be at least four inches thick and if there is pressure from ground water or other causes, the slab thickness should be increased, reinforced and anchored to the footings. As a further precaution the floor should be placed in two layers with a membrane waterproofing between (coal-tar pitch and coal-tar saturated roofing felt). The first course when dried should be mopped with hot tar or asphalt. Before the mopping application has had time to cool and harden, a layer of fifteen pound roofing felt should be placed on this coating, with the edges of the felt well lapped. Two layers of felt and tar or asphalt alternated are recommended. Carry the waterproofing continuous over the entire floor area and up on the inside foundation walls to a little beyond floor level. When pouring the second cement slab, be careful not to damage the waterproofing membrane. A good cement mix is 2½ cubic feet of sand and 3 cubic feet of gravel or crushed stone of 1" maximum size to one sack of Portland cement. Do not use more than six gallons of water per sack. Mix to a plastic consistency which can be placed without honeycombing or developing excess water on the surface (see sketch).

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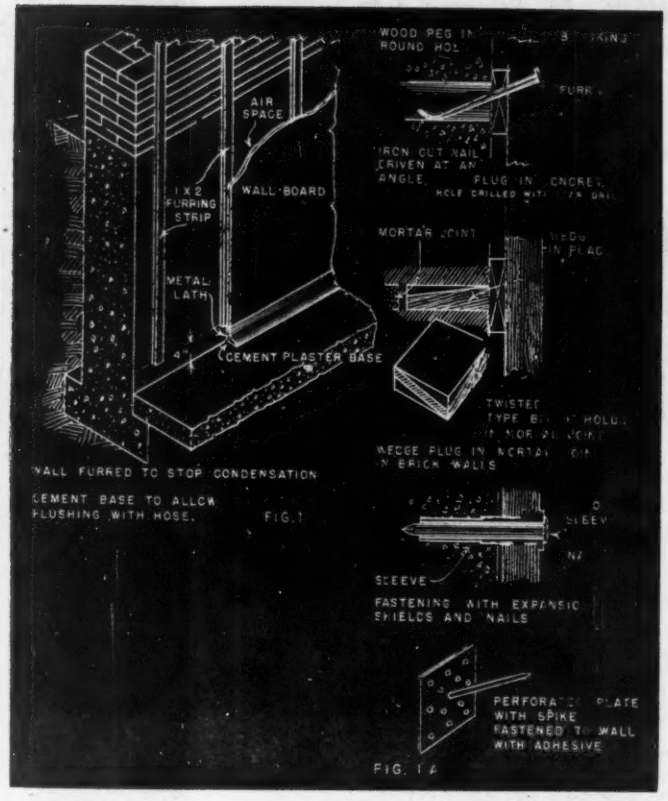
WILL A SODA CRACKER

Practical Procedures for Correcting Basement Dampness

By FRANK CULHANE
Associate Editor



WE RECEIVE almost endless inquiries about remedies for damp or wet basements. It is mighty discouraging to have invested time and money in a recreation room, shop, laundry, or other basement facility and then find that dampness makes the space useless for its intended purpose.

There are so many causes for wet or damp basements that it is impossible to cover the subject in its broadest sense within the limits of this article. But by confining ourselves to the more common causes we are able to discuss the remedies a home owner is able to undertake himself.

Roughly, a basement can be described as slightly or moderately damp—or it may be wet. Manufacturers describe their products as damp proofing when they are applied on the inside of the wall to remedy sweating or moderate dampness caused by moisture from the damp earth working through the foundation wall. A basement is *wet* when water is forced through the pores or crevices in the masonry under hydrostatic pressure.

Both of these conditions differ from the difficulties caused by flooding or from water backing up through the floor drains. This particular type of flooding was the subject of an article on page 306 of the May-June 1952 issue of *Popular Homecraft*.

What Causes Dampness?

There are two general causes of dampness:

1. Condensation or sweating is a result of moisture-laden air coming in contact with cold masonry. This condition is especially common during the humid summer months when poor ventilation prevents movements of air, thus allowing it to cool and condense on cold water pipes and walls. The remedy is to prevent the moist air from coming in contact with the pipes or the walls. This is an easy condition to correct because it only involves covering the pipes with standard pipe covering; the walls can be furred and covered with any of the numerous wall boards. (Figs. 1 & 1A)

Seepage

Seepage is another common cause of damp or wet basements. This may be the result of moisture in the soil penetrating the masonry through cracks or defective walls. Seepage may be the result of water working down the walls during rainstorms because of leaking gutters, uneven walks which pitch toward the house, or it may be the result of improper grading of the earth around the building. When seepage is caused by these conditions inside coatings can be used in sealing the pores of the masonry. Cracks can be repaired from the inside as we will describe later.

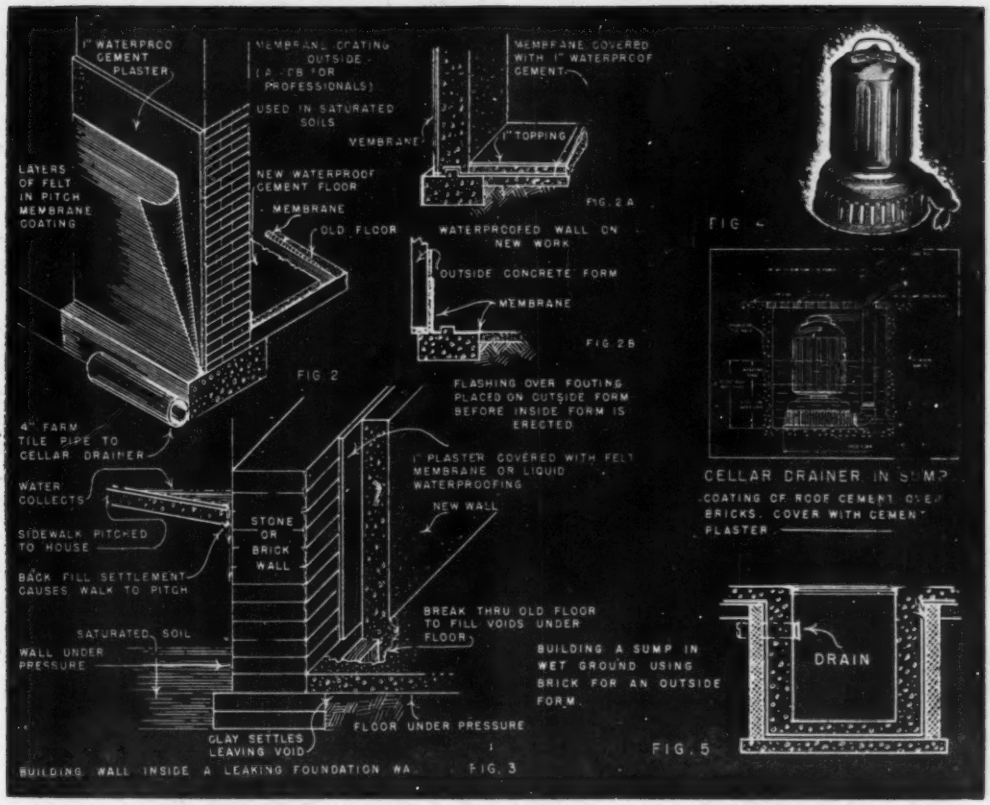
Water Under Pressure

Seepage of water under hydrostatic pressure into basements built in heavy saturated soils cannot be remedied by any liquid coating applied on the inside. When this condition exists in only one small section of the wall a home owner can dig down, find the point of entrance and remedy the condition. If seepage occurs generally around the walls and through the floors, then the services of an expert are required.

There are several methods that professionals use. In extreme cases they dig down and apply a membrane coating of paper and pitch (Fig. 2). On old stone or brick walls they apply the membrane to the inside wall and over the floor. Then they build a new wall of waterproof concrete from the floor to the grade line (Fig. 3). Over the membrane covering the old floor lay a facing of waterproof concrete to make a new surface.

Mixtures For Waterproof Concrete

The method used to make concrete



STAY CRISP IN YOUR BASEMENT?

impervious to water, under these conditions, is to mix two pounds of Medusa or other waterproofing to a sack of cement. Some contractors use one ten-quart pail of hydrated lime to a sack of cement. Medusa waterproof cement can be purchased already mixed. The proportions used for plastering foundation walls are one part of the cement mixture to two parts of clean dry sand. Only enough water is added to make the mixture plastic. Plastering of foundation walls (inside or out) is frequently resorted to when seepage is bad, especially on stone or brick walls. Plaster coats are one inch thick.

Cellar Drainers

Automatic cellar drainers, or sump pumps, are widely used to drain excess water from basements or to relieve hydrostatic pressure on the basement floor and walls. These pumps are placed in pits or sumps in the basement floor (Fig. 4). Many of the devices are placed above the pit with a suction pipe running down to the water. Others are submerged in the pit, leaving the floor clear of obstruction. All of these pumps discharge accumulated water automatically.

The sump is placed below the floor level (Fig. 5). Its size depends upon the specifications of the manufacturer. Usually the sump is connected to a tile pipe around the outside foundation wall.

In old homes this would be difficult so tile pipes are placed under the basement floor adjacent to the sump. This is done when the builder breaks through the floor and before he builds his forms for the sump. In addition to these tiles holes often are drilled through the foundation walls to allow water to flow through the wall into the sump. This relieves the pressure on the wall and it helps to localize the seepage.

What Can The Home Owner Do?

When dampness is caused by moisture penetrating the masonry, you can paint the wall with any of the many compounds advertised for this purpose or you can make your own by mixing a wash of waterproof cement. The mix for the wash is one and one-half pounds of Medusa waterproofing to one sack of cement. The dry materials are mixed thoroughly while dry and then wetted to make a wash with the consistency of heavy cream. This is applied to the wall with a brush.

Before applying the wash clean the old wall of dirt and paint with a wire brush. Then wet it down with the hose. When the free water has run off apply the wash thin. I like to scrub the mixture into the wall with a floor scrub brush and then smooth it with the wall brush. When the wash is dry it can be painted.

Occasionally there is a spot in a wall where the wall shows damp, or there is actual seepage in an otherwise dry wall. This would indicate some defect in the wall and some source of water.

The remedy is to mark the limits of dampness with chalk when it is wet. Chop out the section as deep as possible. It will be fairly easy work once the surface is penetrated. Clean out the space of loose dust and stones. Hose it clean. Paint the edges of the hole with cement wash or dust it with dry cement. Fill the hole with waterproof concrete mixed fairly dry. Pack it in until the patch is level with the surface of the wall. When the cement starts to set smooth it down to the wall and give the entire section of the wall a wash coat of cement mixed with waterproof cement as described before.

Repairing Cracks

Repairing cracks in foundation walls can be done from the inside unless the wall is under heavy pressure. Use a cold chisel to chop out the crack to a width of two or three inches. Clean out the crack and patch it as described. I caulk the bottom of the crack with oakum before filling it.

When cracks are repaired this way they may continue to leak at the floor line. This occurs frequently when gutters leak or land slopes toward the building, or it may occur when drain pipes or elbows break below ground.

The remedy here is to break through the basement floor at the junction of the crack and the floor. A few blows of a sledge or a heavy hammer will break the concrete as there usually is a hollow space below. Next, clean out the opening, soak it, and fill with waterproof concrete 1: 2: 3 mixed to a consistency that will be fluid enough to flow when tamped. This mixture should fill any voids that allow water to collect below the floor.

In instances where soils are saturated or pressure is heavy, cracks repaired from the inside often will continue to leak. If this is true it will be necessary to dig down and repair the crack in the manner described before. In addition, it would be advisable to clean the surrounding wall, chop it and then apply a one-inch coat of waterproof plaster. I would coat this plaster with a thick coat of asbestos roof cement.

Finding Source Of Leaks

The time to find the source of leaks is when the leaks are working. Examine the gutters first to see that they are working. Next in order are the walks and the grading. A bad hidden source is a broken pipe or elbow below the ground where it is connected to conductor pipes. During a heavy storm there would be substantial pressure built up by water in the conductor pipes. This pressure forcing water out of a broken pipe would in time undermine the wall and cause leaks in the basement floor. This condition can be detected sometimes by probing through the surface earth with an iron rod. In clay soils you may find a large void where the clay has settled or washed away.

Sidewalks built against the house settle unevenly and pitch toward the house when the back fill settles. These depressions allow water to collect and run along the walls seeking an outlet into the building.

Settling of backfill causes the earth to slope and drain toward the building. When you consider that water weighs a little less than half a pound per foot of height you can realize that water collecting against the side of a wall has considerable pressure.

The remedy is to dig down a short distance. Repair any cracks or openings in the masonry. Apply a waterproofing coat in a band slightly below grade and a foot above. Regrade the earth to pitch sharply away from the building.

In many rural and suburban communities rain water from the gutters discharges from conductor pipes which are open at the bottom. In time the elbow at the bottom rusts away and the water discharges directly against the foundation wall. I have seen many instances where the only provision to carry away this water was a loose board. A practice of this kind can lead only to seepage problems and a damp basement.

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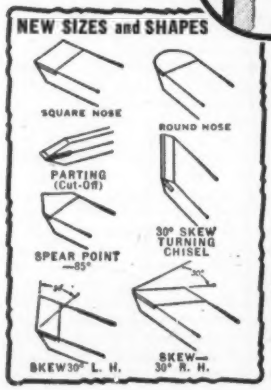

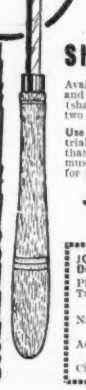

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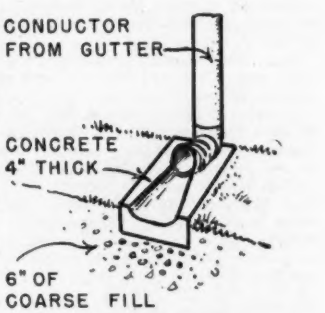


SPLASH TROUGH USED TO DIVERT WATER AWAY FROM FOUNDATION WALL

FIG. 6

The remedy is to build a concrete splash trough (Fig. 6) or run off which will carry the water away rapidly for a distance of at least three feet. This is easy to make: Set two boards for forms. Hold

them with 1" x 2" stakes. Excavate down through the loose top soil. Slope the forms away from the building. Use a fairly dry mix of one part cement, two parts sand, and three parts small stone. Tamp it in place and when it is stiff form the trough with a board or a trowel.

QUESTIONS AND ANSWERS

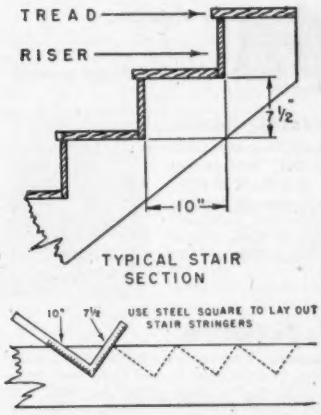
What's your home workshop problem? Ask us your questions—and if we don't know the answers we'll do our best to find them for you without delay.

By Perry S. Graffam, Associate Editor

Q. I have some lumber which I should like to use but it has been lying around for some time and some of the boards are warped. Many of the knots in the boards are loose also. Is there any way in which I can salvage this lumber?

A. I believe that you should be able to straighten the warped boards by supporting them at either end and placing a weight in the center. Try a fairly light weight and increase it each day until the board is straight. Push the loose knots out and coat with cellulose cement. Put the knot back in place, allow to dry, sand well and stain.

Q. Please give me information on how to plan stairs from one floor to another. My ceiling height is 8' 9".



A. The best stairs are those built without any turns and wide enough to permit the moving of furniture from one floor to another. Three feet width is adequate but three and one-half feet is preferable. Allow plenty of head room, at least 6' 9". All risers and treads should be in proportion, that is, the total of one riser and one tread should equal 17½". Two risers and one tread should equal 24" to 25". It usually requires from 13 to 16 risers with 13 to 15 treads from one floor to another. As your ceiling height is 8' 9", you should have a minimum of fourteen 9" treads and 8½" risers or fifteen treads of 10" width and 7½" risers. Either of these two methods equal 17½". A table for different ceiling heights for 7½" risers is given for those who have similar problems.

Ceiling height	Number required for 9" tread	10" tread
7'6" to 8'0"	12	13
8'0" to 8'6"	13	14
8'6" to 9'0"	14	15
9'0" to 9'6"	15	16

Sketches show typical stairs and how to lay out stringers.

Q. How can I finish knotty pine wall paneling in a honey-colored finish?

A. Brush on light oak penetrating stain. After it has soaked into the wood for 3 or 4 minutes, wipe off surplus with a cloth. Let dry at least 24 hours. Next apply a stain sealer. Finish with flat varnish or wax.

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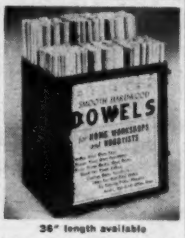

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HELPFUL LITERATURE for the home owner

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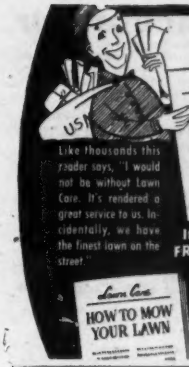
(H-7) We were intrigued by the colorful booklet of ideas issued by Western Pine Association. It is called "Enchanting Homes of Western Pines," and its 24 pages contain 67 photographs of outstanding room arrangements—in pine, of course. 8 of the pages are in full color. Shown are exteriors, kitchens, dens, dining rooms, bedrooms, play rooms—every room in the house. Each is a classic example of good design. Circle H-7 on the order form.

Kitchen Floors Can Be Beautiful

(H-8) Home owners planning kitchen modernization will want to investigate Congoleum-Nairn's new line of Gold Seal rubber tile. Send for the Gold Seal booklet which describes this new floor covering and which illustrates in true colors the twenty different colors and combinations. Also shown are 15 suggested designs. These tiles are resilient, water-and-grease-resistant, and possess sound-proofing characteristics. Circle H-8 on the order form.

Planning To Expand Your Home?

(H-9) "Here's How to Stretch Your Home for Better Living" is the descriptive title of an extremely helpful 8-page booklet recently issued by Ponderosa Pine Woodwork. It features practical tips on building more space into your home, and gives more than 30 plan suggestions for extra sleeping space, hobby areas, attics, garages—for every room. Before and after sketches aid visual evaluation. Enclose 10c when ordering this booklet. Circle H-9 on the order form.



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How To Install Rubber Tile Correctly

(H-10) Another floor covering booklet of interest to the home owner is American Biltrite Rubber Co.'s piece which describes the several steps for installing Amtico rubber floor tiles. Contains chart for working out floor designs, also several suggested patterns. Gives necessary information on preparing the old floor, as well as installation details. Shows home installation kit which facilitates the work. Circle H-10 on the order form.

More How-To Information

(H-11) "How to Apply Arborite" is a semi-technical and very helpful 8-page booklet which explains in detail how to apply Arborite, an all-plastic counter top and surfacing material. Numerous mechanical drawings and 40 close-up photos illustrate the different steps and methods. Counter tops and splashbacks, walls, around bath tubs, surface preparation, etc., are covered clearly. Circle H-11 on the order form.

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Compiled by Ernst H. Suerken

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San Francisco 4, Cal.

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The Rigidity and Strength of Frame Walls
Practical Suggestions on Frame House Construction (R 991)
Dept. of Agriculture
Forest Products Lab.
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Waterproofing Concrete and Other Masonry Walls Above Ground (Inform. Series 75)

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Farmhouse Plans (F 1738)
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Standards and Specifications for Building and Construction Materials, Fixtures, Supplies and Equipment (LC 997)

Dampness in Basements and Ground Floors (LC 813)

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Tacoma Building
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Racking Loads and Resistance to Them in Dwelling Construction (Tech. Bulletin No. 6)
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How to Build a House of Concrete Masonry
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Requirements for Individual Water-Supply and Sewage Disposal Systems
Federal Housing Adm.
Washington 25, D.C.

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Federal Security Agency
Public Health Service
Washington 25, D.C.

Properties of Four Experimental Flush-Type Doors (Tech. Paper No. 10)
Some Properties of Paper-Overlaid Veneer and Plywood (Tech. Paper No. 9)
Individual Sewage Disposal Systems (Tech. Bulletin No. 7)
Septic Tank Studies (Tech. Bulletin No. 4 or Technical Paper No. 14)
Aspects of Electrical Installation in Houses (Technical Bulletin No. 7)
Housing & Home Finance Agency
Washington 25, D.C.

Simplified Standards for Lead Traps and Bends
Lasting Lead Work in Modern Plumbing
Lead Industries Assn.
420 Lexington Ave.
New York 17, N.Y.

Wood Interiors Offer An Infinite Variety of Decorative Effects
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1319 18th St., N.W.
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Terazzo Streamline Bathroom Bulletin
National Terazzo & Mosaic Assn.
1420 New York Ave., N.W.
Washington 5, D.C.

Modernization of Bathroom Plumbing
The Importance of Correct Piping Design and Installation
Modern Plumbing Fixtures
Modern Aids to Property Value
Pumbing & Heating Ind. Bur.
35 E. Wacker Drive
Chicago, Ill.

Concrete Structures for Farm Water Supply and Sewage Disposal
Portland Cement Assn.
33 West Grand Ave.
Chicago 10, Ill.

An Inside Story of Tidewater Red Cypress
Tidewater Red Cypress Interiors
Southern Cypress Mfrs. Assn.
721 Barnett National Bank Bldg.
Jacksonville, Florida

Southern Hardwood Interiors
Southern Hardwood Producers
805 Sterick Building
Memphis 3, Tenn.

List of Inspected Gas, Oil and Miscellaneous Appliances
List of Inspected Electrical Appliances
Underwriters' Laboratories
207 E. Ohio St.
Chicago 11, Ill.

Four of the World's Finest Woods
Sitka Spruce Lumber
West Coast Hemlock Lumber
Western Red Cedar Lumber
Use of the Right Grade of Lumber in Your Home
West Coast Lumberman's Assn.
1410 S.W. Morrison St.
Portland 5, Ore.

Facts about Ponderosa Pine (P-S-2)
Facts about Sugar Pine (P-S-3*)
Facts about White Fir (P-S-6*)
Economy Sidings (Bulletin No. 403)
Vacation Cabins Built with Log Cabin Siding
Facts about Englemann Spruce (P-S-7)
Facts about Idaho White Pine (P-S-4)
Bunk Bedroom Details
Beautiful Paneled Walls of Genuine White Pine
Paneling Old or New Interiors with Red Pine
Western Pine Assn.
Yeon Building
Portland 4, Ore.

Uniform Plumbing Code
Western Plumbing Officials Assn.
4733 Templeton St.
Los Angeles 32, Cal.

Part Three: Floors, Walks and Roofs:

How to Make Galvanized Roofing Last Longer
Facts about Galvanized Sheets
Directions for Laying Galvanized Roofing
American Zinc Inst.
60 East 42nd St.
New York 17, N.Y.

The Life of Your Roof Hangs by a Nail
Safeguard Your Home with Copper, Brass and Bronze
Copper & Brass Research Assn.
420 Lexington Ave.
New York 17, N.Y.

Preventing Cracks in New Wood Floors (L 56)
Roof Coverings for Farm Buildings and Their Repairs (F 1751)
Dept. of Agriculture
Div. of Information
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The Care of Floors (LC 935)
Floor Oils (LC 765)
Relative Resistance of Floor Covering Materials to Abrasives (TIBM-524)
Selection, Installation and Care of Linoleum (BMS-14)
Shingles: Mineral Surfaced Asphalt (TIBM-53)
Roofing Slate (R 14-28)
Adhesives for Floor Coverings (TIBM-53)
Finishes for Concrete Floors
Types of Decks Adapted to Bituminous Built-Up Roofing
Concrete Floor Treatments (TIBM-9)
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Design Data and Load Test on Reinforced Gypsum Floors and Roofs
Gypsum Assn.
20 N. Wacker Dr.
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Properties of Experimental Wood-Base House Flooring Materials (Technical Paper 11)
Housing & Home Finance Agency
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Lead (published periodically)
Lead Industries Assn.
420 Lexington Ave.
New York 17, N.Y.

Finishing Northern Hard Maple Flooring
A Glimpse of an Interesting Modern Home
Maple Flooring Mfrs. Assn.
46 Washington Blvd.
Oshkosh, Wis.

Plank and Beam Floor and Roof System
Wood Floors—Comfort and Beauty Underfoot
National Lumber Mfrs. Assn.
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Home Owner's Guide to Flooring
Oak Floors for Long Time Beauty
Specification Manual for Certified Oak Floors
Planning and Decorating the Most Important Side of a Room (Floor)
How to Lay, Finish and Care for Oak Floors
National Oak Flooring Mfrs. Assn.
814 Sterick Building
Memphis 3, Tenn.

Technical Data and Specifications for Terazzo and Mosaic Work
Terazzo Maintenance Bulletin
Outdoor Terazzo Bulletin
Divider Strip Location and Data Bulletin (Terazzo Floors)
National Terazzo & Mosaic Assn.
1420 New York Ave., N.W.
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Suggested Specifications for Applying Finishes and Coverings on Concrete Residence Floors
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Suggested Specifications for Cast-in-Place Concrete Floors
Suggested Specifications for Concrete Walks, Driveways, Aprons, Terraces and Porch Floors (P-16 ON)
Suggested Specifications for Precast Joist Concrete Floors with Cast-in-Place Slab
Portland Cement Assn.
33 West Grand Ave.
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Certigrade Handbook on Red Cedar Shingles
Roofs and Exterior Walls of Red Cedar Shingles
Blueprints—Red Cedar Shingle Application
Red Shingle Bureau
5510 White Building
Seattle, Wash.

Approved Maintenance Methods for Rubber Floors
Standard Specifications and Approved Method for Installing Rubber Tile Flooring
Rubber Manufacturers' Assn.
444 Madison Ave.
New York 22, N.Y.

Pecky Cypress Blocks for Garden Walks
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721 Barnett National Bank Bldg.
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Southern Pine Assn.
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405 Montgomery St.
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Handbook of Insect Enemies of Flowers and Shrubs (M 628)
Planting and Care of Lawns (F 1677)
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Lime on Lawns and Flower Gardens (Bulletin 100-A)
National Lime Assn.
927 Fifteenth St., N.W.
Washington 5, D.C.

Part Five: Heating and Insulation:

Sound Absorption Coefficients of Architectural Acoustical Materials (Bulletin XI 1949)
Acoustical Materials Assn.
205 West Monroe St.
Chicago 6, Ill.

How to Conserve Anthracite Coal and Improve Your Heating
Anthracite Industries
101 Park Ave.
New York 17, N.Y.

Radiant Heating
Copper & Brass Research Assn.
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The Treatment of Sawdust Insulation for Protection Against Decay, Insects, Animals and Fire
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Insulation (Inform. Series No. 76)
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Thermal Insulation of Dwelling Houses (LC 774)
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Notes on Domestic Fuel Oil Conservation
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Performance of Masonry Chimneys for Houses (Tech. Paper No. 13)
Condensation in Walls and Roofs (Tech. Papers 1, 2, 3, 8 & 12)
Attic Condensation in Tightly Built Houses (Tech. Bulletin No. 6)
What to Do About Condensation (Tech. Bulletin No. 3)
Housing & Home Finance Agency
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Sound Insulation Values of Floors and Walls
What the Farmer Should know about Insulating Board
Application Instructions for Structural Insulating Board
Simplified Heat Loss Card
Insulation Board Inst.
111 West Washington St.
Chicago 2, Ill.

Facts You Should Know About Home Insulation
Insulation and Your Home
Recommended Practices for the Installation of Mineral Wool Batts and Blankets
National Mineral Wool Assn.,
2906 RKO Building
Rockefeller Center
New York 20, New York

List of Inspected Gas, Oil and Miscellaneous Appliances
Underwriters' Lab.
207 East Ohio St.,
Chicago 11, Ill.

Condensation in Buildings (LC 863)
Thermal Insulation; Comparative Estimated Fuel Savings in Heating Dwelling Houses Equipped with Various Means for Reducing Heat Loss (TIBM-3)
Thermal Insulation; Summary and Conclusions (TIBM-6)
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Nat. Bur. of Standards
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Home Insulation with Mineral Products (Inform. Cir. 7388)
How to Save Fuel at Home (Inform. Cir. 7229)
Dept. of Interior
Publication Sec.
4800 Forbes St.
Pittsburgh 13, Penn.

Insulating with Plywood
Preventing Condensation in Walls and Ceilings
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Tacoma Building
Tacoma 2, Wash.

Sound Absorbing Gypsum Plaster
Gypsum Assn.
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Part Six: Masonry, Concrete, Plastering:

Reinforced Concrete; A Manual of Standard Practice
Concrete Reinforcing Steel Inst.
Builders' Building
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Fireplaces and Chimneys (F 1889)
Concrete Fence Posts (Inform. Series 58)
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Calcium Chloride as it Affects Portland Cement and Concrete (TIBM 8)

Concrete Masonry Units (LC 914)
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Concrete Forms of Douglas Plywood
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Fireproof Gypsum Lath
Gypsum—A Nonmetallic Mineral
Manual of Gypsum Lathing and Plastering
Brief on Gypsum Plaster
Adhesion of Gypsum Plaster to Various Backings
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Gypsum Assn.
Opera Building
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Lightweight Aggregates for Concrete—A Survey
Housing & Home Finance Agency
Washington, D.C.

Indiana Limestone
Indiana Limestone Inst.
Bedford, Indiana

Metal Lath News
Metal Lath for Homes
Concrete Stucco for Modernizing
Metal Lath Manufacturers Assn.
Engineers Building
Cleveland 14, Ohio

A Standard Ordinance for Chimney Construction
National Board of Fire Unds.
85 John St.
New York 7, N.Y.

Make Your Chimneys Safe
National Fire Protection Assn.
60 Batterymarch St.
Boston 10, Mass.

Lime Mortar—Its Relation to Watertight Masonry (Bulletin 320)
Masonry Mortar (Bulletin 321)
National Lime Assn.
927 Fifteenth St., N.W.
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Facts About Concrete Masonry
Suggested Specifications for Concrete Masonry Chimneys and Fireplaces (P 160)
Concrete Masonry Chimney Construction (CP-66)
Concrete Swimming Pools
Building with Concrete Masonry
Suggested Specifications for Interior Wall and Ceiling Finishes Plasterer's Manual
Suggested Specifications for Portland Cement Stucco on Concrete Masonry Walls
Concrete Improvements Around the Home
Portland Cement Assn.
33 West Grand Ave.
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Part Seven: Paints, Painting, Furniture Refinishing:

Metallic Zinc Paint
American Zinc Inst.
60 East 42nd St.
New York 17, N. Y.

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Preparation of Paints from Paste and Dry Pigments (TIBM 35)
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Painting Plaster (TIBM 18)
Painting for Priming Plaster Surfaces (TIBM 11)
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The Painting of Exterior Wood Surfaces (LC 810)
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Soft, Mellow Paneled Walls
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Tacoma Building
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Two-Coat Paint Systems for Exterior Use (Bulletin UN-4)
Federal Housing Adm.
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Lead (published periodically)
Red Lead Technical Letter
Property Protection with White Lead Paint
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Whitewash and Cold Water Paints (Bulletin 304-E)
National Lime Assn.
927 Fifteenth St., N. W.
Washington 25, D. C.

How to Paint Tidewater Red Cypress
Southern Cypress Mfrs. Assn.
721 Barnett National Bank Bldg.
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Painting and Finishing West Coast Woods
West Coast Lumberman's Assn.
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Portland 5, Ore.

Painting Over Knots With Knot Sealer
Treatments for Finishing Knotty Pine Walls
Western Pine Assn.
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Part Eight: Miscellaneous

Fire Protection Through Modern Building Codes
Building Codes and Fire Safety
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350 Fifth Ave.
New York 17, N. Y.

Operation Housing
Here's How on Vets Housing
American Legion
Indianapolis, Ind.

Things to Know about Buying or Building a House
American Trust Co.
San Francisco, Cal.

Facts You Should Know about Buying or Building a House
Better Business Bur.
Boston, Mass.

Making Log Cabins Endure (R 982)
Dept. of Agriculture
Forest Products Lab.
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Closets and Storage Space (F 1865)
Decay and Termite Damage in Houses (F 1993)
If You're Thinking of a Little Place in the Country (IS. 14)
Some Questions and Answers on Where and How to Get a Farm (IS. 19)
Protection of Log Cabins, Rustic and Unseasoned Wood from Injurious Insects (F 1587)
Reduction of Decay Hazard in Basementless Houses on Wet Sites (Forest Pathology Spec. Release No. 30)
Prevention and Control of Decay in Buildings (Forest Pathology Tech. Note No. 251)
A Step Saving Kitchen
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Check List—Suggestions for Possible Repairs and Improvements in the House and Its Equipment
Polishes (LC 753)
Detergents and Related Subjects (LC 925)
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Dampness in Basements and Ground Floors (LC 813)
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FHA Property Improvement Loans (FHA 850)

The Packaged Mortgage, A List of Selected References
FHA Home Loan Insurance (FHA 74807)
Federal Housing Adm.
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Gypsum Partition Tile and Fireproofing
Fireproof Gypsum Wall Board
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Exposing the Termite
National Lumber Mfrs. Assn.
1319 18th Street, N. W.
Washington 6, D. C.

Minimum Standards of Size and Quality (Kitchen Sinks and Counter Tops)
Sink & Counter Top Mfg. Inst.
514 Park Building
Cleveland 14, Ohio

Tidewater Red Cypress Repels Termite Attack
Southern Cypress Mfrs. Assn.
721 Barnett National Bank Bldg.
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Approved Standard Architectural Dimensions for Steel Kitchen Cabinets
Quality Standards for Steel Kitchen Cabinets
Steel Kitchen Cabinet Inst.
140 Public Sq.
Cleveland 14, Ohio

List of Inspected Fire Protection Equipment and Materials
List of Inspected Appliances Relating to Accident Hazard
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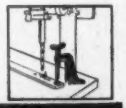

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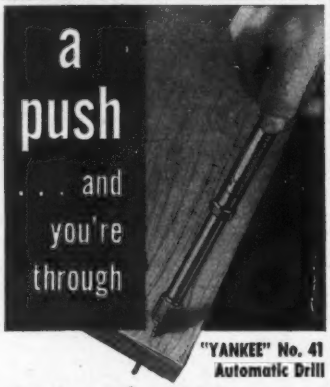

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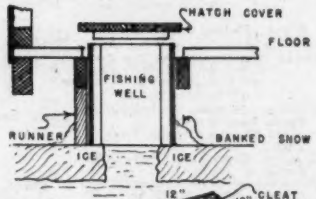
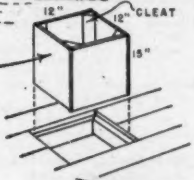
The single window can be equipped with a roller shade if you prefer to keep out the light for better visibility in the fishing well. To prevent drafts from the latter an open-ended box is let down through the opening, banked with snow on the outside. A hatch cover is provided for the well when not in use. When the small oil stove is going a sliding vent above will carry off the fumes, and also provide ventilation for sleepers at night.

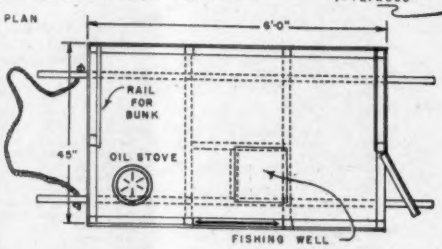
The bunks consist of canvas over poles, the ends of which fit in notches in rails, as illustrated. In the day time the upper, or both bunks can be rolled up against the wall. The plywood is available in 4' x 8' panels and scrap can be used for the box in the fishing well and handy racks to accommodate your individual equipment.

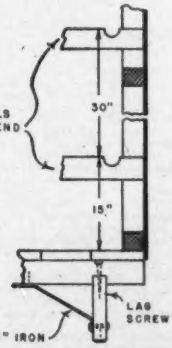
Runners are ⅞" (net, or thicker) pine or fir, and shod with strap iron if they are to be used on the highway. Note that they are braced to the floor joists with strap iron. Give the exterior at least two coats of paint, and lay linoleum over insulating board on the floor.

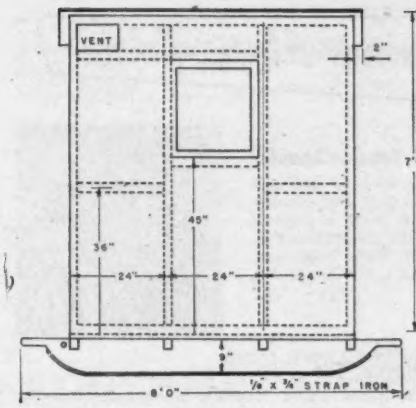
BILL OF MATERIALS
Plywood: 182 sq. ft. ¼" outdoor plywood
Frame: 154 lin. ft. 2" x 2" pine or fir
Runners: 16 lin. ft. ⅞" x 7"
Joists: 4 pcs. 2" x 3" x 48"
Floor: 24 sq. ft. pine or fir
Linoleum: 24 sq. ft.
Celotex: 24 sq. ft.
1 sash 24" x 24"
Braces on runners: 16 ft. 3/16" x 1" strap iron
Runners: 14 ft. ⅛" x ¾" strap iron
3 door hinges
1 latch
Well: 1 piece outdoor plywood ¼" x 15" x 48"

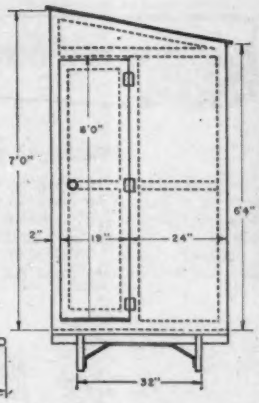


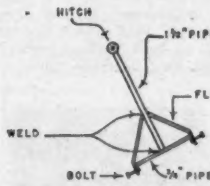


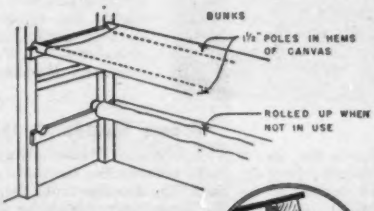




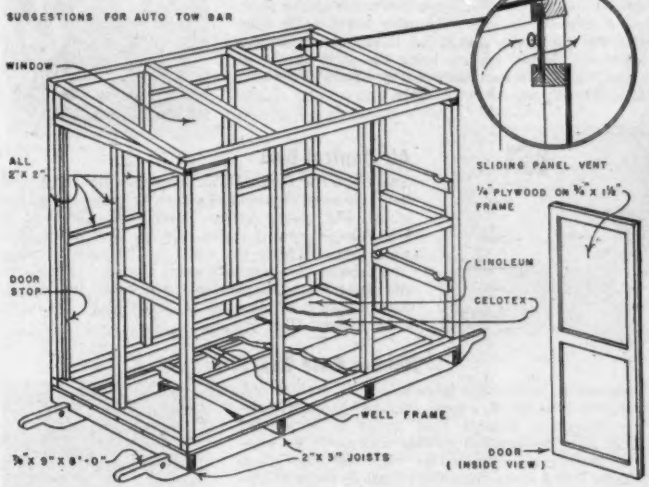






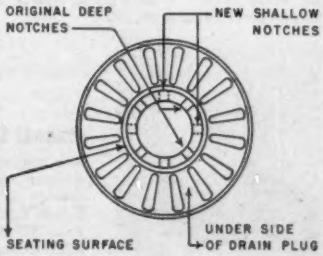


SUGGESTIONS FOR AUTO TOW BAR



DRAIN PLUG EFFICIENCY

SOME modern sink drain plugs are notched on the bottom to permit closing the drain outlet, but not to keep the outlet open when desired. By filing a second set of shallow notches in the drain plug bottom, between the original notches, as shown, the plug may be located and held in open position more easily. Plugs of different design may require somewhat different treatment to achieve similar results.



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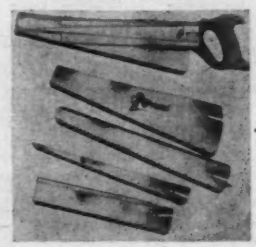

A 5-in-1 saw set complete with five blades. A product of Pennsylvania Saw Corp. They take sharpening. High quality steel.

The set consists of:
16" panel saw—for general carpentry.
16" hacksaw blade—to cut through nails.
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8 Alloy Steel SCREW DRIVERS

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No. 2 Phillips included but not shown

All blades were forged from square alloy steel bars. Equipped with the famous square grip hardwood handles with rich natural wood grain finish. Blade sizes are: 1/8 x 2, 5/16 x 2, 5/16 x 4, 5/16 x 8, 1/4 x 6, 1/4 x 10, 5/16 x 8.

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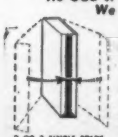


2 OR 3 SIMPLE FOLDS AND IT IS ASSEMBLED

HOMECRAFT and the HOME OWNER

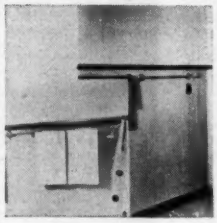
154 East Erie St., Chicago 11, Ill.

LOOKS LIKE A FINE BOOK

HOME OWNERS' Shopping Column

Trouble Shooter

The Trubl-Shooter is designed to cope with the problem of stopped up sinks, wash basins, showers, tubs and toilets. It is of sufficient length to open up 90% of the stoppages, used in the same manner as a plumber's "snake." Price $1.95. Home Necessities, Inc., 1129 South Queen Anne Place, Los Angeles 19, Calif.

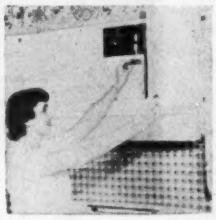


Plastic Tile

Illustration shows Meridian broad bevel Splendor plastic tile (8½" x 8½") used in an installation in conjunction with Meridian's regular 4¼" x 4¼" plastic tile. Features the broad bevel in both lines as well as the "gripper design" back which insures tight grip to wall. Pillars on back surface prevent "dishing." Meridian Plastics, Inc., Byesville, Ohio.

Bronze Weatherstripping

Here's the way Kel-eez, bronze weather-stripping material, shuts off drafts between the threshold and the bottom of the door. The installer cuts the U-shaped channel strip to the exact width of the door, using ordinary tin snips. Clearance between the door and the threshold should be 3/16" for maximum efficiency. Spring tension holds the strip firmly in place. Kel-eez is manufactured by Kunkel Products, Inc., 217 Ash St., Akron 2, Ohio.

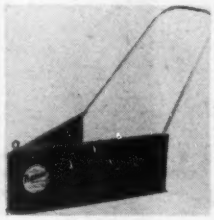


Air Control Unit

The Lyon Air Control Unit fits above the range and keep kitchens cleaner and cooler by removing steam, smoke and greasy vapors. Merely lift the hood to start blower housed in the cabinet. Unit has a lifetime washable filter that pulls out for easy cleaning. The cabinet also provides extra storage space above the range. Finish, Bonderized white baked-on enamel. Size, 42" W x 13" D x 24" H. Lyon Metal Products, Inc., Aurora, Ill.

Rubber Base Board

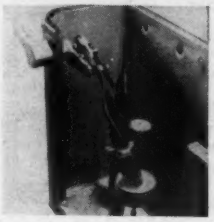
Designed to enable the householder to replace old, unsightly base board, a new, easy-to-handle all rubber, amazingly flexible base board is announced which may be installed quickly and easily by anyone. Moreover, no tools are required other than scissors and a knife. Sani-Cove-Base is made of live rubber, 4" high, and is available in 3' lengths. Toe extends ⅝" on the floor. Also available are inside and outside corners with each side of the angle 2½" in length. Strip, 3' long, 4" high, 78c each; corners 40c each; cement $1.45. Cass Products Co., 6127 N. Cicero Ave., Chicago 30, Ill.



Manual Snow Plow

This manual snow plow was "perfected in actual use through six Connecticut winters." It clears a 2-ft. path in 9 inches of snow, is 5 ft. long, yet folds to 3-inch thickness for storage. All steel, weight 17 lbs. Price $22.50. County Specialties, P.O. Box 929, Stamford, Conn.

HOME OWNERS' *Shopping Column*



Bathroom Tank Attachment

The Dual-Flo attachment permits two different quantities of water to be used in flushing toilet. Eliminates flooding of septic tanks. Extends life of motors and water pumps. Saves electricity. 3" guide gives positive re-seating of tank ball. Dual-Flo can be installed in a few minutes, requires no plumbing. $4.95 from Dual-Flo, P.O. Box 420, Greenfield, Ind.

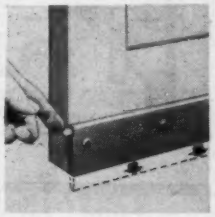
Cellar Door Operator

This is the new "Feather Action" door operator recently introduced by The Bilco Co., New Haven, Conn., manufacturers of Bilco Celladoors. Sold in sets as an optional accessory, the devices can be quickly and easily attached by anyone who desires finger tip operation of his Bilco Door. Priced $5.85 per set, the operators are packaged in a handy carton and available through lumber and building supply dealers.

Woven Fabric Folding Doors

Ra-Tox folding doors save room space by opening and closing to the side, and give ventilation to closets or rooms even when closed. Available in standard door and special sizes for use as closet doors, between-room doors, and room dividers. Made of wood fabric woven together with heavy duty twine. All hardware included. Each door completely finished. Wide range of colors including natural wood finish. Hough Shade Corp., Janesville, Wisc.

Prevents Door Drafts

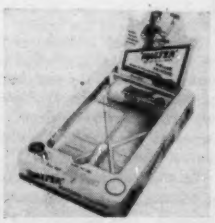


Protruding from the upper end of a Stop-a-Draft is a button which, when pressed in, sends down to the floor a strip of weather-proofed insulating felt that seals the door-to-floor opening. Easily attached to the inside bottom of the door by means of four screws. Made to fit every standard door width. For odd sizes, an adjustable model is available. Sentry Stop-a-Draft Co., 20 N. Wacker Dr., Chicago 6, Ill.

Scrubbable Flat Enamel

Staley's Vel-Tone is a moderately-priced true enamel which dries hard within one hour to a smooth dead-flat finish. Will not crack, chip or mar. Can be washed repeatedly. No need for a special primer; primer, sealer, undercoat and finish coat are all "built-in." Currently made are 12 basic colors which can be intermixed to obtain many shades. Staley Paint Mfg. Co., St. Louis 10, Mo.

Roller Painter



The "Master" makes it possible to paint the walls of an entire room in a morning or afternoon. You literally roll the paint on, covering large areas in little time. Lightweight; all-aluminum roller head and hand-fitting grip; one-piece aluminum tray with reservoir and legs, is designed to hook on ladder steps. Introduced by A. G. Jacobus' Sons, Inc., Verona, N. J.

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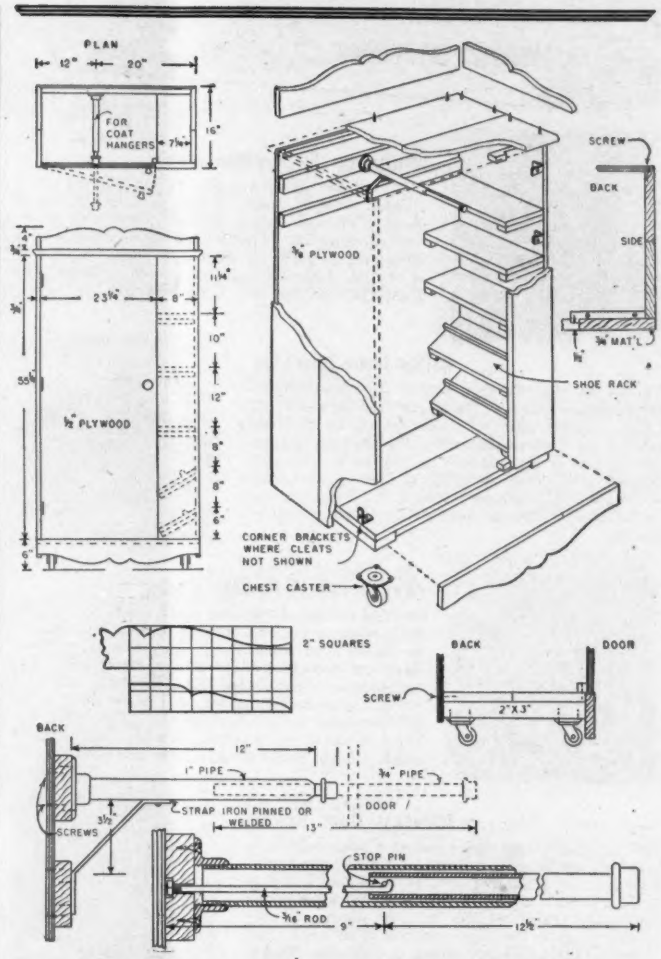


PORTABLE WARDROBE FOR THE EMERGENCY GUEST

By HI SIBLEY

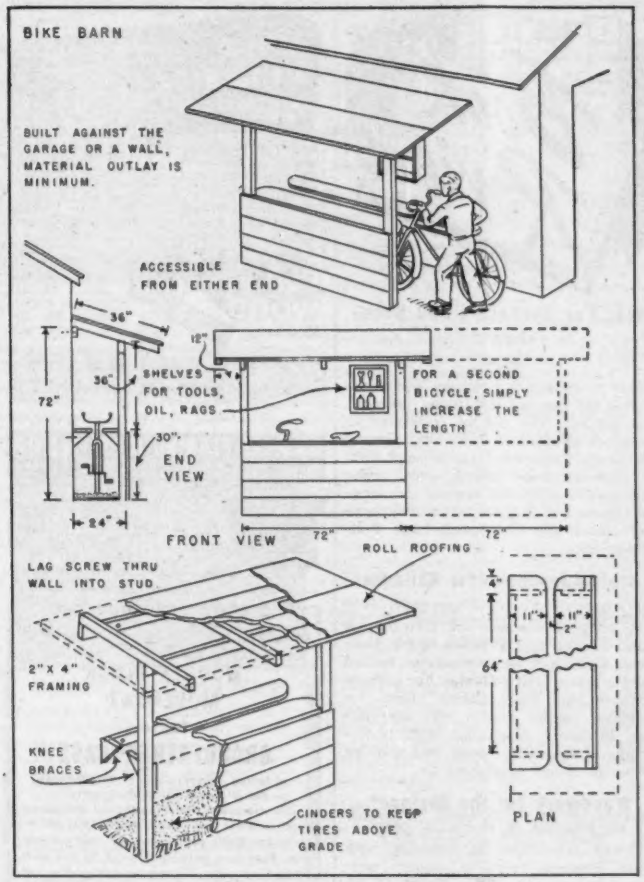
WHEN you have bedded down your unexpected guest on the couch in the living room, where does he hang his clothes? Here is a compact wardrobe you can roll into any room. It always will be in use, you may be sure, by a visitor or a member of the family.

Construction is more or less conventional: ¾" pine, redwood or other material for sides, top and bottom; and ⅜" plywood for the back. Joints are assembled with hardwood cleats or small angle brackets inside. The cabinet rides on swivel chest casters.

In addition to shelves and shoe racks, a telescoping bar accommodates clothes hangers. This consists of a ½" pipe sliding inside a 1" pipe, the former having a stop pin and hooked rod which prevents its coming all the way out. The plywood door is hung on three butt hinges and has a friction catch opposite the knob. Finish depends on individual choice, whether natural grain or enamel.

BILL OF MATERIALS

1 panel plywood ⅜" x 32" x 56" back
1 panel plywood ½" x 24" x 56" door
4 pieces pine ¾" x 8" x 60" sides, front
4 piece pine ¾" x 8" x 32" tops and bottom
4 pieces pine ¾" x 8" x 16" shelves
8 lineal ft. ¾" x 5" scroll sawed pieces
4 chest casters
1 piece pipe 1" x 12" with floor flange, hanger bar
1 piece pipe ¾" x 13" with cap.
1 rod, 3/16" x 10", threaded one end
Scrap wood for cleats
3 Butt hinges, 1 door knob, friction catch
12 small corner brackets, with screws



JUNIOR—PICK UP YOUR BICYCLE!

By HI SIBLEY

BICYCLES are usually left in the most convenient places; if not prone on the driveway, they will likely be lolling on the front steps. During rains they might get as far as the garage, just a few inches over the space to be occupied by the car when it comes home, causing father to get out to move it. And such sultry language!

Junior will find it easier to trundle his wheel into this handy "Bike Barn" because it does not need to be leaned against anything. It simply goes into the groove and remains upright.

With odds and ends of lumber the material outlay will be negligible, a garage wall or fence not only serving as one side of the structure, but bracing it as well. To start, secure two parallel and horizontal two-by-fours to the garage wall at heights indicated, using lag screws through siding or stucco into the studs. Three rafters are sufficient to support the light roof, which can be of rough boards covered with remnants of roll roofing. Cinders or even dirt on the floor keep the wheels out of the wet.

By doubling the length two bicycles can be sheltered, removable from either end.

BILL OF MATERIALS

50 sq. ft. ¾" pine or fir
4 pieces 2" x 4" x 72"
3 pieces 2" x 4" x 36" rafters
26 sq. ft. roll roofing
Scrap for shelves
Lag screws, nails

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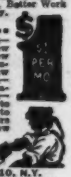

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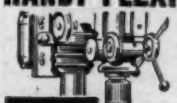

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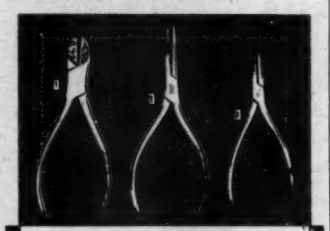

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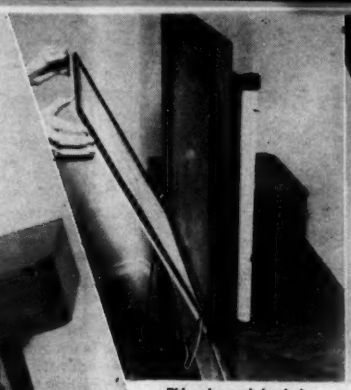


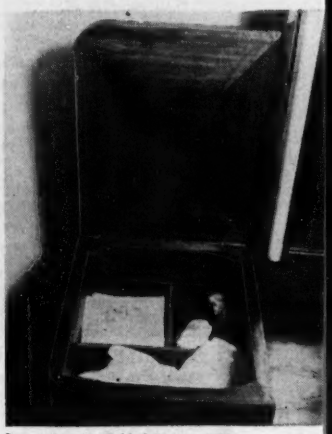
This plywood back being inserted measures 19 7/16" x 19 1/8" x 1/4".

Parts of compartments.

BY

BENJAMIN

NIELSEN



Compartments divided to accommodate personal belongings.

DRESSING TABLE

HAS FLUORESCENT-LIGHTED MIRROR

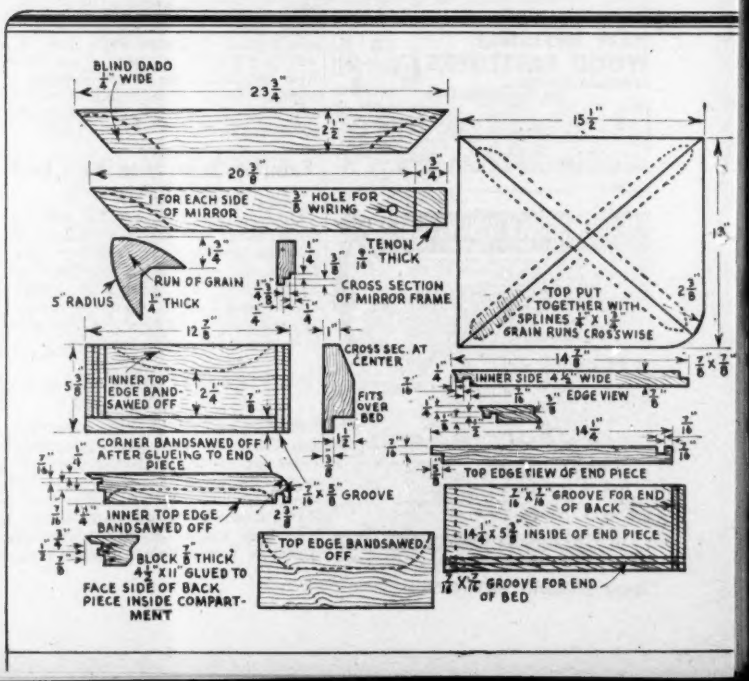
THE simplicity of this dressing table is enhanced by the mirror-light treatment. Beauty aids may be kept in one of the roomy compartments, while the other is divided to accommodate gloves, handkerchiefs, hose, etc.

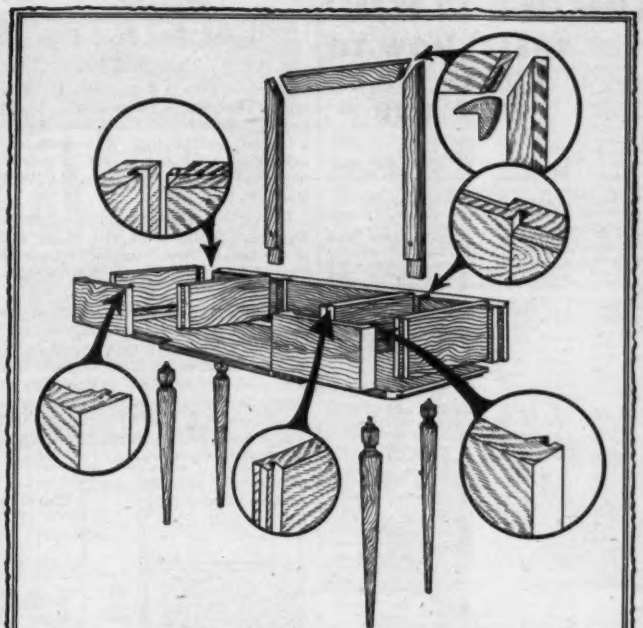
Construction begins with the shelf or bed which is built up to the desired width. Ends and back edges are shaped to fit grooves dadoed in the end pieces and back. Then a piece is prepared for the back of the table, according to detailed drawings. Drawings will show clearly the dimensions, joints, etc., used in sides and front of compartments.

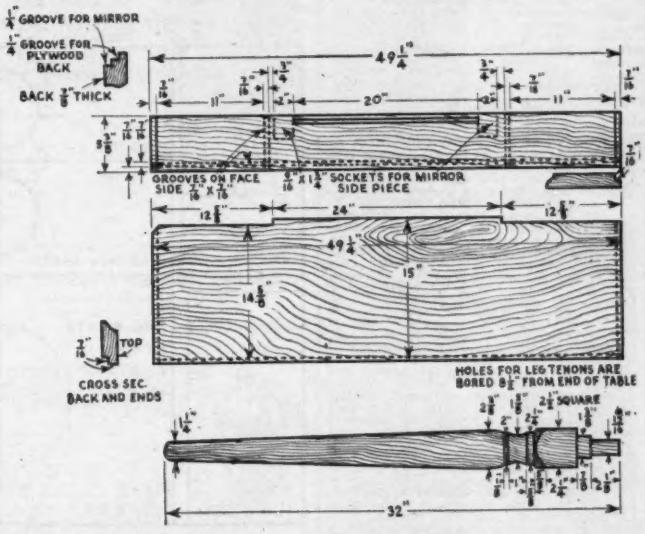
The four-piece layout makes an interesting lid for the compartments, while the method used in construction insures unusual strength. Piano hinges are used on the lids.

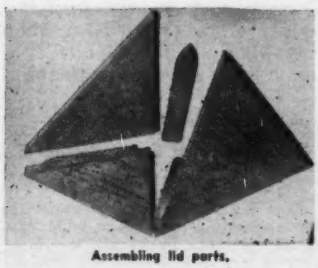
The frame for the mirror is made according to specifications. The backing for the mirror is cut from 1/4" plywood. Adhesive sponge rubber weather strip is applied. It is applied on the inside of the plywood to provide a cushion which holds the mirror securely in place and also absorbs bumps. The plywood back is fastened securely with roundhead brass screws and washers.

Legs are fitted into holes bored as







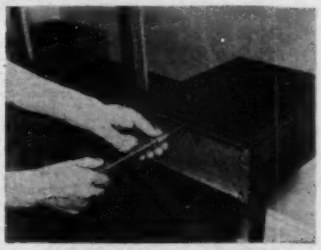


Assembling lid parts.

shown. Note that the back of each compartment has been built up to provide material so holes may be bored to take the back legs.

Compartments may be divided according to personal needs. It is a good idea to use removable dividers. Since no glue is used it is a simple matter to change the divisions and to remove them quickly for cleaning purposes.

Walnut was used in making the table illustrated. However, virtually any wood will make an equally attractive table. If walnut is used, filler should be rubbed in, followed by two coats of varnish rubbed down between coats, then waxed. If softwood is used, it may be stained or painted.



Attaching lid with piano hinge.

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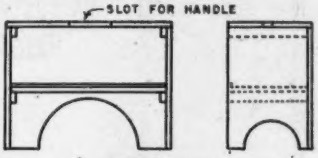
Quickie:
Bench, Step, Stool, Etc.
By Rudolph Caple

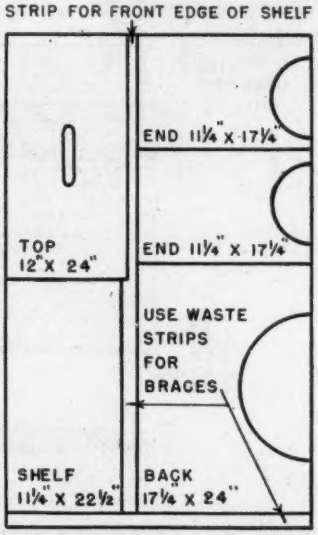
Here's a project I have found useful for odd jobs about the home. In the normal position this bench can be used as a seat or bench 18" high. When used front side down it becomes a seat or step 12" high. Turned on end it serves as a sturdy stool 24" high.

I use it as a portable tool box by placing the tools I plan to work with on the shelf of the bench. Then I can carry both the tools and the bench to the place where I wish to work.

The bench is designed so that all the pieces can be cut from a single sheet of ¾" plywood 2½" x 4' with practically no waste. I fastened together all parts with glue and screws. This project can be completed in one evening even if hand tools are used. I finished my bench with floor enamel so that it can be used outdoors when necessary.



THREE WAY UTILITY BENCH FOR ODD JOBS



2½' X 4' SHEET OF ¾" PLYWOOD SHOWING METHOD OF CUTTING OUT PIECES WITHOUT WASTE

Quickie:
Temporary Space Filler
By Darrell T. Daggy

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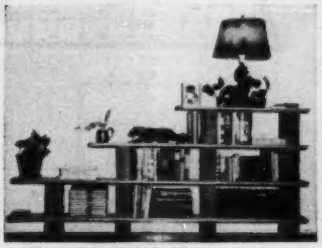
This is a good space filler if your new home needs more furniture than you have. We built this as a temporary space filler ourselves, but like it so well we have adopted it as a permanent fixture.

Four bricks between shelves give enough space for the average book. The projecting ends are rounded slightly. As there are no nail holes or joints in the shelf boards they may be used later on, for a more permanent project. The bricks can be reused also.



Quickie:
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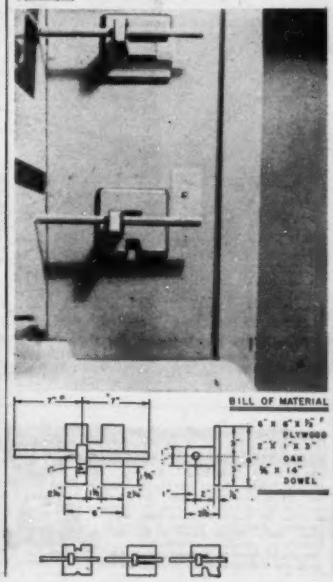
By Walter R. Holmstrom

Here's a simple way to beat the high cost of chrome towel racks. There is no question about which towel or washcloth is whose; your initial tells you.

All that is needed for each rack is a 6" x 6" piece of ½" plywood, 2" x 1" x 3" block with ¾" hole and one ¾" dowel 14" long. Cut out the initial with coping saw, sand, and fasten the three pieces together with screws. Paint to match bathroom, and varnish dowel with spar varnish.



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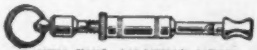

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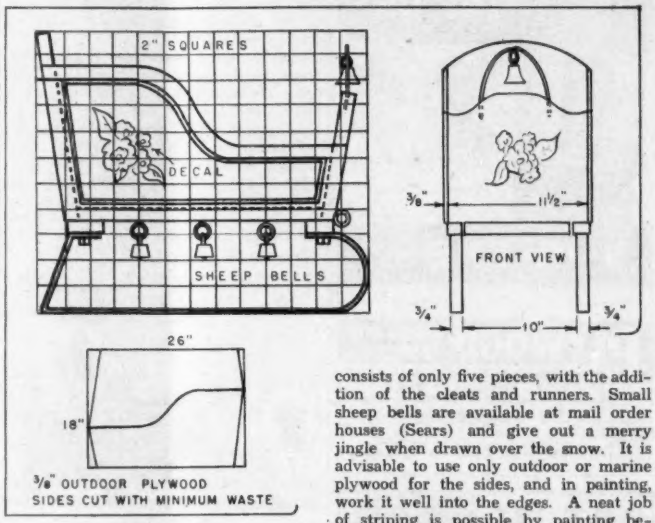
By Hi Sibley



If your child already has a coasting sled you need only to make this body and bolt it on; if not, the strap-iron runners are easily made. A minimum of material is required and construction is extremely simple for the home workshop. Body consists of only five pieces, with the addition of the cleats and runners. Small sheep bells are available at mail order houses (Sears) and give out a merry jingle when drawn over the snow. It is advisable to use only outdoor or marine plywood for the sides, and in painting, work it well into the edges. A neat job of striping is possible by painting between parallel strips of Scotch tape. Decal figures will liven up the appearance.

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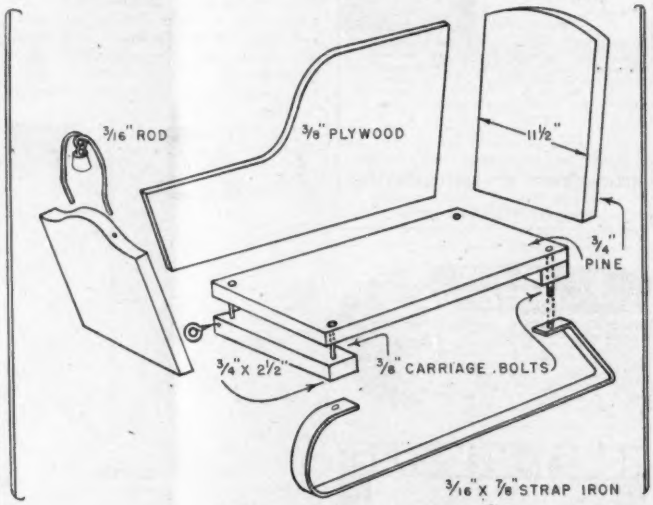
1 piece pine 3/4" x 11 1/2" x 48"
1 piece strap iron 3/16" x 7/8" x 64"
7 sheep bells
Screws, paint, decalcomania



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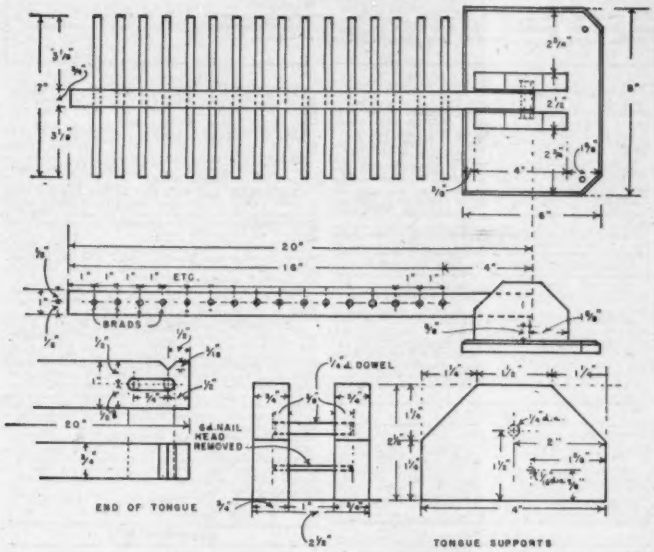
THE "64" TIE RACK

BY ORVILLE GRISIER



HERE is a rack that will solve the "hanging" problem for the man with as many as 64 neckties.

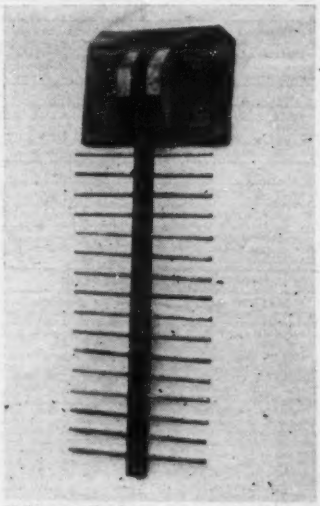
As the drawing shows, there are sixteen 7" prongs, each of which will hold four ties.

Start by making a tongue of a piece of wood ¾" x 1" x 20". Mark off positions for the prongs on the 1" side of the tongue, one inch apart for 16", and cross each line with a marking gauge in the center. Four inches are left at the upper end to provide a slot and a notch for supporting the rack at a horizontal angle.

Cut a notch ½" from the upper end and 3/16" deep on top of the tongue. Then, in the center of this end, bore two ¼" holes along the center, one ½" from the end, and another ¾" beyond. Cut out the space between. This makes a slot one inch long and ¼" wide.

Make the base 6" x 8" of ½" plywood or other material. Then build two supports, each 4" long x 2½" high, of ¾" material. Make a ¼" hole halfway through the wood 1½" from the bottom, and 2" from either end. Make a 1/16" hole ⅝" from the bottom and 1⅝" from one end. Reverse the side for the 1⅝" measurement on the other member of the support so they will match when put face to face.

Get enough ¼" dowel material to make the 16 prongs. Make a jig and cut each 7" long. Bore a ¼" hole at each of the sixteen positions you have marked, as shown in the drawing. If you do not have a mechanical drill, you will have to measure carefully to see that they are drilled straight through the material. Force the dowels through the holes. Carefully center the two prongs at each end and after securing with brads, place against a straight edge. Then line up all the other prongs against this straight edge.



64 ties are rather heavy, so use good solid screws to fasten rack to the wall.

Now, use a piece of the waste dowel for the ¼" hole in your supports, and cut the head off a 6d common nail for the 1/16" holes. Put the dowel and nail in one side, slip the tongue over the dowel, and fit the other support in place. As soon as they are adjusted, screw them in place from the back of the base in the positions shown.

You will find that the tongue will hang downward, but when lifted up and pushed back under the nail, will remain in a horizontal position. Two holes in the top of the base will serve to screw the rack to the closet door, or to the wall.

(*Continued on page 192*)

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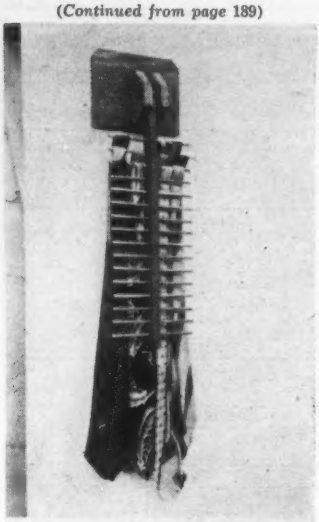
(Continued from page 189)



The tie rack in its "down" position, showing how ties hang, with rack taking up very little space.

Tie rack in a horizontal position. Note how, even if the rack were full, each tie could be seen easily.

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BY W. H. McCLAY

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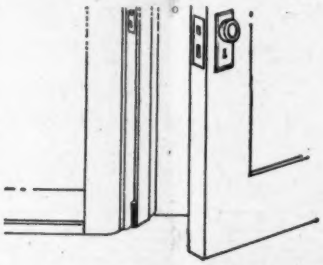

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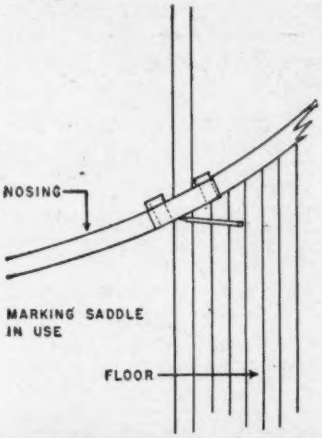
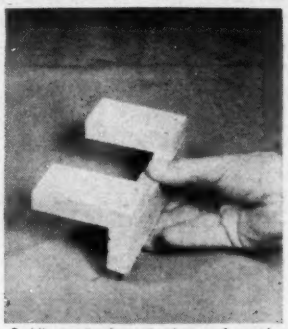
TO insure accuracy of fit when laying flooring on wide curved steps or platform, the saddle shown in the accompanying illustrations is an ideal tool. It is made simply from three small pieces of wood, assembled as shown in the drawing.



SADDLE FOR FLOORING



Saddle made from 3 pieces of wood.

Saddle used in marking when laying flooring on wide curved steps insures accuracy.

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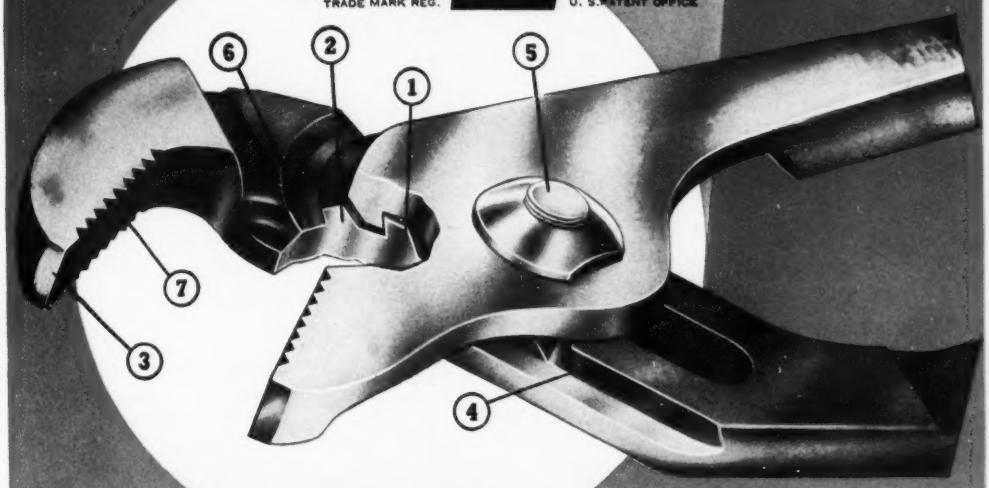
Here's the First NEW idea in plier design in years...

THE NEW No. 420

CHAN NEL LOCK PLIER

TRADE MARK REG. U. S. PATENT OFFICE



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1. Interlocking principle positively prevents slipping under any load . . . the heavier the job, the greater the interlocking action.
2. New type wide base lugs provide maximum cross section strength . . . cannot shear.
3. New nose design provides greater utility for gripping small objects.
4. Patented design of tension edge provides more strength and eliminates stress concentration at channels.
5. New interlocking design minimizes stress on joint bolt.
6. Precision machined interlocking surfaces provide perfect fit, thus distributing pressure evenly.
7. "Rite Angle" teeth guarantee maximum bite and minimum wear.

Here's the new, improved Channellock Plier—bringing to you new features which offer more positive gripping, greater strength and longer wear. The undercut interlocking channel is the first really new idea in plier design in years. Engineering skill has developed a plier with new patented features which give you the newest, strongest, most practical plier you can buy. Here is a plier that will last for years! Channellock Pliers—made only by Champion DeArment Tool Co., Meadville, Pa.

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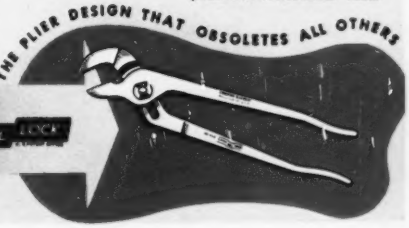

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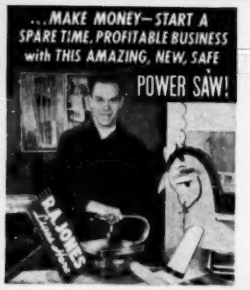

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